7

ORNL

Oak Ridge
National
Laboratory

Operated by
Union Carbide Corporation for the
Department of Energy
Oak Ridge, Tennessee 37830

ORNL/EIS-149

EPA

United States
Environmental Protection
Agency

Office of Toxic
Substances
Washington, DC 20460

EPA-560/2-78-007

CADMIUM IN FOODS:
A Review of the World's Literature

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

ORNL/EIS-149
EPA-560/2-78-007
February 1979

Contract No. W-7405-eng-26

CADMIUM IN FOODS: A REVIEW OF THE WORLD'S LITERATURE

by
John S. Drury and Anna S. Hammons
Health and Environmental Studies Program
Information Center Complex/Information Division
Oak Ridge National Laboratory
Oak Ridge, Tennessee 37830

Work sponsored by
Office of Toxic Substances
U.S. Environmental Protection Agency
Washington, D.C.
under Interagency Agreement No. D6-0151

Project Officer
Charles M. Auer

NOTICE
This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

February 1979

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37830
operated by
UNION CARBIDE CORPORATION
for the
DEPARTMENT OF ENERGY

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, contractors, subcontractors, or their employees, makes any warranty, express or implied, nor assumes any legal liability or responsibility for any third party's use or the results of such use of any information, apparatus, product or process disclosed in this report, nor represents that its use by such third party would not infringe privately owned rights.

This report has been reviewed by the Office of Toxic Substances, U.S. Environmental Protection Agency, and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the U.S. Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

CONTENTS

Tables v
Preface. vii
Abstract ix
1. Introduction 1
2. Rationale for Data Selection 1
3. Cadmium in Foods 4
    3.1 Description of Table Notations. 4
    3.2 Tabulated Values of Cadmium in Foods. 6
    3.3 Analytical Summary of Cadmium in Foods Data 6
4. Estimated Cadmium Intake from Foods. 8
    4.1 Tabulated Values of Cadmium Intake from Foods 8
    4.2 Analytical Summary of Cadmium Intake Data 10
5. Analytical Methods 12
    5.1 Atomic Absorption Spectrometry. 12
    5.2 Anodic Stripping Voltammetry. 14
    5.3 Spectrophotometric Colorimetry. 15
    5.4 Emission Spectroscopy 15
    5.5 Neutron Activation Analysis 15
    5.6 Mass Spectrometry 16
Appendix 29

TABLES

1. Estimates of cadmium intake from foreign foods. 3

2. Average and upper limit concentrations of cadmium in Total Diet Study samples, 1968-1974 7

3. Typical concentrations of cadmium in selected foods from uncontaminated areas. 9

4. Estimates of cadmium intake from U.S. foods 10

5. Estimates of dietary intake of cadmium from single foods by 15- to 20-year-old U.S. males. 13

A.1. Cadmium in U.S. foods from uncontaminated areas, by category and decreasing concentration 31

A.2. Cadmium in U.S. foods from uncontaminated areas, alphabetical listing. 81

A.3. Cadmium in U.S. foods from contaminated areas, by category and decreasing concentration. 131

A.4. Cadmium in U.S. foods from contaminated areas, alphabetical listing 137

A.5. Cadmium in foreign foods from uncontaminated areas, by category and decreasing concentration 145

A.6. Cadmium in foreign foods from uncontaminated areas, alphabetical listing. 211

A.7. Cadmium in foreign foods from contaminated areas, by category and decreasing concentration 275

A.8. Cadmium in foreign foods from contaminated areas, alphabetical listing. 291

PREFACE

This review is a product of the Health and Environmental Studies Program, Information Center Complex, Information Division, Oak Ridge National Laboratory (ORNL). It was prepared for the Office of Toxic Substances, U.S. Environmental Protection Agency (EPA), in partial fulfillment of an interagency agreement to review the occurrence of cadmium in foods. Most of the approximately 150 cited references were collected during the first quarter of 1978, but updating of some reference material occurred subsequent to the EPA review of the manuscript in October 1978.

The authors are indebted to Gerald U. Ulrikson, manager of the Information Center Complex, for his continued support during the preparation and revision of this review. The advice and support of Charles M. Auer, EPA Project Officer, and the cooperation of the Toxicology Information Response Center and the Energy and Environmental Response Center of the Information Center Complex, Information Division, ORNL, are gratefully acknowledged. The authors would also like to thank Faye Fletcher for the computer-produced section of this report, Maureen Hafford for editorial assistance, and Donna Stokes and Ann Aaron, typists.

ABSTRACT

This document tabulates detailed information for most of the original measurements of cadmium in foods published since 1940 and summarizes estimates of dietary intake of cadmium in the United States and foreign countries. Cadmium concentrations are indicated for about 1500 individual foods listed alphabetically and by decreasing concentration within typical food categories. Separate compilations are provided for foods originating in contaminated and uncontaminated areas and for domestic and foreign products. Most foods contained low concentrations of cadmium, generally less than 0.050 mg/kg, wet weight. Concentrations of cadmium were greatest in shellfish, leafy vegetables, potatoes, grain and cereal products, and selected animal organs, particularly kidneys and liver. The use of cadmium-containing phosphate fertilizers increased the concentration of cadmium in some, but not all, plant foods. Diets chosen exclusively from foods produced near point sources, or from highly contaminated soils, put users at great risk of exceeding recommended intake levels. No clear pattern of concentration differences could be discerned in foods produced in areas distant from point sources. Although annual increases of cadmium in successive crops of certain plant foods were documented, no temporal trend of increasing cadmium concentrations in food is apparent in the tabulated data, nor is there a perceptible increase in the cadmium content of foods due to canning or other food-processing operations. Estimates of dietary intake of cadmium vary widely. Based on the tabulated data, the average daily U.S. dietary intake appears to lie within the range 30 to 50 μg. This estimate is higher than values reported for several western European countries, but is lower than some Japanese and Canadian values. The estimated U.S. daily dietary intake of 30 to 50 μg is 42% to 88% of the recommended total tolerable limit of 400 to 500 μg per week and leaves little room for intake from other environmental or occupational sources. The principal nondietary, environmental exposure to cadmium occurs through tobacco smoking. Excessive cigarette smoking can contribute as much, or more, cadmium as dietary sources. It thus appears entirely feasible for residents of polluted areas or for urban dwellers who are habitual eaters of cadmium-rich food and are heavy smokers to approach or exceed the recommended total tolerable limit of 400 to 500 μg of cadmium per week. Accordingly, every reasonable effort should be made to limit further increases of cadmium in the environment. With respect to agricultural soils, such a policy implies careful control of the use of fertilizers and sludges that contain high concentrations of cadmium. Recommended safety precautions for farm soils containing hazardous levels of cadmium include immobilizing cadmium in acid soils by addition of lime and selection of crops known to absorb minimal amounts of cadmium.

1. INTRODUCTION

Cadmium is one of the rarer elements in nature, ranking 66th among those in the earth's crust; nevertheless, it is widely distributed in continental rocks, and low concentrations of the element commonly occur in air, soil, marine and fresh waters, and the biosphere (Fassett, 1975).

Excessive accumulation of cadmium in man, either by acute intoxication or prolonged exposure to low concentrations, results in a variety of maladies ranging from gastroenteritis to renal tubular dysfunction (Buell, 1975; Perry et al., 1976). The acute toxic properties of cadmium were first observed more than 100 years ago, but deleterious effects of chronic exposures to low concentrations of the element have been extensively documented only during the last 30 years (Friberg, 1948; Friberg, 1950; Tsuchiya, 1969; Yamagata and Shigematsu, 1970; Fleischer et al., 1974; Friberg et al., 1974; Friberg et al., 1977).

It is now generally accepted that food constitutes the principal environmental source of cadmium for the nonsmoking human population (Fleischer et al., 1974). Dependable estimates of cadmium in individual foods and selected classes of foods are thus essential for reliable determinations of cadmium intake. However, published values of the cadmium content may be influenced by plant type, soil conditions, type and amount of fertilizer, insecticide or fungicide used, and the extent of contamination from external sources (Allaway, 1968; Friberg et al., 1975). Similarly, cadmium in foods derived from animals may vary with animal type and tissues, food consumed by the animal, and extent of external contamination of the animal and its food. In addition, published values of cadmium in food depend on sample preparation, analytical method, and expertise of the analyst. Only rarely is all of the relevant information included when summaries of the cadmium content of foods are published. This document attempts to remedy this deficiency by summarizing available information concerning the concentration of cadmium in foods so that better estimates can be made of the daily human intake of cadmium in the United States. Data are reported from most of the pertinent papers published since 1940. The survey has been limited to original measurements obtained under field conditions; pot studies performed in greenhouses and research experiments involving deliberately added contaminants are not included.

2. RATIONALE FOR DATA SELECTION

The literature was surveyed extensively to locate papers describing primary measurements of cadmium in foods. *Chemical Abstracts* and *Biological Abstracts* were manually searched for appropriate papers published between 1940 and 1971, and 1940 to 1970, respectively. Computerized data bases were searched for recent literature. These included: Chemical-Biological Activities (CBAC), from 1965; *Abstracts on Health Effects of Environmental Pollutants*, from 1972; *International Pharmaceutical Abstracts*, from 1970; the National Library of Medicine's *Toxicity Bibliography*, from

1968; Hayes File on Pesticides and Pesticides Abstracts, from 1966; Environmental Mutagen Information Center files, from 1968; Toxic Materials Information Center files, from 1971; Environmental Teratology Center files, from 1971 to 1974; Teratology files (TERA), from 1971 to 1974; *Chemical Abstracts*, odd issues, from 1972; *Biological Abstracts*, from 1971; *Bio-Research Index*, from 1971; *Government Records Abstracts*, from 1972; Energy Data Base, from 1976; *Nuclear Science Abstracts*, from 1967 to 1976; National Technical Information Service, from 1970; Agricola, from 1970; and *Food Science and Technology Abstracts*, from 1969.

Not all the data resulting from these searches were included in this report. Many references, primarily descriptions of analytical techniques for determining cadmium in food, did not adequately characterize the food samples. Other publications, particularly reviews, pooled data from many sources without indicating the basis on which the summaries were made. In several studies the reported concentrations were systematically greater than well-established values for comparable samples. These abnormal data were considered to result from analytical difficulties and were not included among the tabulated values (Van Loon, 1975). In a few instances, potentially interesting data were not included because the full text of the paper could not be obtained in time. Despite these omissions, the various tables contain a sufficient diversity of sample types, sample sources, analytical techniques, and analysts to ensure a reasonable measure of confidence in the average concentration of cadmium cited for each food type, as well as for the estimates of average intake.

References excluded from this review because of suspected analytical difficulties include Schroeder et al., 1967; Tipton and Stewart, 1970; Murthy et al., 1971; Rodriquez, 1973; Chellapan et al., 1976; and Kropf and Geldmacher-v. Mallinckrodt, 1968. In the first three studies, cadmium was determined by atomic absorption spectrometry before it was generally known that sodium chloride biased results obtained by this technique. Accordingly, these investigators did not eliminate this interference from process samples prior to analysis; presumably, abnormally high results were obtained as a consequence. A cadmium extraction step is now considered standard practice by experienced analysts when similar samples are analyzed by atomic absorption spectrometry (Friberg et al., 1974, p. 5). Rodriquez (1973) and Chellapan et al. (1976) used instrumental neutron activation techniques to determine cadmium in typical Puerto Rican diets. Their results exceed commonly accepted values by factors of six to ten, possibly because of undetected interferences or calibration problems. Whatever the cause, the data require substantiation by a different analytical technique and independent analysts before acceptance. The data of Kropf and Geldmacher-v. Mallinckrodt (1968) were obtained by the spectrographic method; their data average two to six times generally accepted values.

Hamilton and Minski (1973) estimated a daily dietary intake of 64 ± 30 μg cadmium for U.K. citizens during 1966-1967. This value is about twice that found by the Ministry of Agriculture, Fisheries, and Food in 1973 (Table 1). The estimate was apparently obtained by mass spectrometry without benefit of relative sensitivity corrections. In the absence of

Table 1. Estimates of cadmium intake from foreign foods

Country	Year	Estimated cadmium intake (μg/day)	Analytical method	Comments	Reference
Canada	1969	85	AAS	Calculated from analyses of 12 categories of composited food, prepared as for eating, assuming a typical Canadian diet of 1800 g per day.	Somers, 1971
Canada	1970-1971	67	AAS	Calculated for diet of 1800 g food per day.	Kirkpatrick and Coffin, 1974
Czechoslovakia	[]	60	Sp or MS or AAS	Calculated from analyses of foods by authors and by Schroeder et al. (1967), assuming typical Czechoslovakian diet. Some assumed analytical values are probably too high.	Lener and Bibr, 1970
Japan	[]	47	[]	Based on National Nutrition Census and subsequent chemical analysis of indicated foods. Total intake obtained by calculation.	Fukushima, 1973 (as cited in Friberg et al., 1974)
Japan	1972	31	AAS	Duplicate family meals (one day) were analyzed directly. Daily intake throughout Japan ranged from 3 to 149 μg.	Yamagata and Iwashima, 1975
Japan	1966	59	[]	Based on National Nutrition Census and subsequent chemical analysis of indicated food. Total intake obtained by calculation; nonpolluted area.	Yamagata and Shigematsu, 1970
Japan	1966	215	[]	Based on National Nutrition Census and subsequent chemical analysis of indicated food. Total intake obtained by calculation; polluted area.	Yamagata and Shigematsu, 1970
New Zealand	[]	21	AAS	Average intake by 11 women. Initially reported as 48 (range 21-104) μg per day, but reduced to 21 (range 7-76) after correction for background effects.	Guthrie, 1973
Rumania	[]	38-64	Sp	Calculated from chemical analyses of individual foods and an assumed average food ration. Maximum estimated daily intake varied from 103 to 176 μg.	Rautu and Sporn, 1970
Sweden	[]	10-13	NT	Estimate based on direct analysis of duplicate meals supplied to four test subjects confined in a metabolic ward for five-day intervals.	Wester, 1974
United Kingdom	1971-1972	15-35	AAS	Based on analyses of Total Diet samples and an assumed daily intake of 1.5 kg of food. Includes intake from beverages. Lower limit of range assumes value of zero for samples containing less than 0.01 mg/kg cadmium; upper limit of range assumes value of 0.01 mg/kg cadmium for samples containing less than 0.01 mg/kg cadmium.	Ministry of Agriculture, Fisheries, and Food, 1973
West Germany	[]	48	AAS	Estimate based on chemical analysis of 17 food categories and average per capita consumption of various types of food.	Essing et al., 1969

data needed for a critical evaluation of the Hamilton and Minski determination, and in view of its substantial divergence from the well-established Ministry of Agriculture, Fisheries, and Food estimate, the value was not included in Table 1.

3. CADMIUM IN FOODS

The data on cadmium in foods are presented in tables which classify the information according to sample origin (United States or foreign) and extent of contamination of the soil in which the food originated (normal or contaminated). Two variations of each tabulation are shown, one with entries ordered by decreasing concentration of cadmium within each food category, the other with foods arranged alphabetically.

3.1 DESCRIPTION OF TABLE NOTATIONS

Foods in each table are classified into broad food categories specified in the Total Diet Study program (Duggan and McFarland, 1967; Hopkins, 1975) of the Food and Drug Administration (FDA): dairy products; meat, fish, and poultry; grain and cereal; potatoes; leafy vegetables; root vegetables; legume vegetables; garden fruits; fruits; oils, fats, and shortening; sugars and adjuncts; and beverages. This system of classification was chosen for convenience and to take advantage of the numerous, precise FDA analyses which have been accumulated under these designations on a continuing basis since 1967. The individual foods comprising the 12 Total Diet Study categories are as follows:

- Dairy products (category 1) — fresh, evaporated, and nonfat milk; ice cream; cottage cheese; processed cheese; natural cheese; butter; margarine

- Meat, fish, poultry (category 2) — lamb or mutton; roast beef; ground beef; pork chops; cured pork sausage; bacon; fresh or frozen eviscerated chicken; fresh or frozen fish fillet; canned tuna or salmon; luncheon meat; frankfurters; beef liver; eggs

- Grain and cereal (category 3) — general purpose and self-rising flour; pancake mix; corn flakes; shredded wheat or wheat cereal; rice, rice flakes, or puffed rice; oatmeal; corn meal; elbow macaroni; enriched and unenriched white bread; Italian-style bread; whole wheat bread; sweet rolls; doughnuts; saltines; plain cookies; frankfurter rolls; graham crackers; pie crust; cake; raw, canned, and frozen corn

- Potatoes (category 4) — baked, boiled, and fried white potatoes; potato chips; fresh or canned sweet potatoes or yams

- Leafy vegetables (category 5) — raw and canned beet tops; collards, mustard and spinach; frozen spinach; raw celery; raw and boiled cabbage; fresh and frozen broccoli; fresh, frozen, and canned asparagus; raw and canned mushrooms; raw and frozen cauliflower

- Legume vegetables (category 6) — raw, frozen, and canned peas; green beans; lima beans; canned pork and beans

- Root vegetables (category 7) — canned and raw carrots; raw and boiled onions; raw and canned beets (without tops); raw turnips (without tops); raw rutabaga

- Garden fruits (category 8) — raw pepper; fresh and canned tomatoes; catsup; raw cucumber; raw eggplant; raw and frozen summer squash

- Fruits (category 9) — fruit filling from pie; fresh oranges; canned and frozen orange juice; bananas; raisins; fresh and canned peaches; fresh and canned apples; fresh or frozen strawberries; raw or canned apricots; raw, canned, or frozen cherries; raw grapes; raw and canned pears; raw, canned, and frozen pineapple; raw and canned plums; raw or frozen rhubarb (without tops); raw watermelon

- Oils, fats, shortening (category 10) — French salad dressing; mayonnaise; salad oil; shortening; peanut butter

- Sugars and adjuncts (category 11) — white sugar; jam or jelly; pudding mix; blended syrup; molasses; candy bar; baking powder; salt; cider vinegar

- Beverages (category 12) — tea leaves; cocoa; drinking water; ground coffee; soft drinks

Literature data for foods which do not fit any of the indicated Total Diet Study categories were tabulated in a miscellaneous category labeled Other.

The method by which a food is processed may influence the amount of cadmium contained in a sample and, hence, the amount ultimately reported for that food type. The processing method for each tabulated food is indicated by a letter or symbol immediately following the food name. R denotes raw or fresh; C, canned; F, frozen; and [], not reported. Other methods of preparation are denoted by O and are described more fully in the comments column.

Unless otherwise noted, the mean concentration of cadmium is reported as milligram or kilogram of sample, wet weight. This numerical value is equivalent to microgram per gram or parts per million. Generally, the mean was obtained by assigning a value of 0 to samples containing less than detectable quantities of cadmium. For cadmium, this procedure results in only a very slight underestimation of the total daily intake (Mahaffey et al., 1975). Means marked with an asterisk (*) denote samples associated with cadmium-containing phosphate fertilizer. In some instances, samples are oven-dried to a constant weight before analysis. Such data are designated by the notation, dry basis. When available, the number of samples and concentration range are also indicated. In sample sets containing one or more assays below the limit of detection, the lower limit of the range is usually given as the limit of detection of the analytical method. In certain instances when the limit of detection was unspecified, the lower limit of the range is indicated as zero.

The various analytical techniques used to determine cadmium in foods are indicated in the tables by letter symbols. Thus, AAS denotes atomic absorption spectrometry; ES, emission spectrometry; NT, neutron activation; MS, mass spectrometry; P, electrochemical techniques including polarography and anodic stripping voltammetry; and Sp, spectrophotometry. The detection limit of the method in parts per million is recorded immediately following the symbol for the analytical method.

Since the cadmium content of foods may vary with time as well as geographical region, the place and date of sampling are recorded. When appropriate, comments explaining or augmenting the tabular data are included. The last column also indicates the original literature source. Throughout the tables, absence of information in the original report is indicated by the use of brackets.

3.2 TABULATED VALUES OF CADMIUM IN FOODS

Measured values of cadmium in U.S. and foreign foods are presented in Tables A.1-A.4 and A.5-A.8, respectively. Foods from uncontaminated areas are listed by decreasing cadmium concentration in Tables A.1 and A.5, and alphabetically by food names in Tables A.2 and A.6. Similar data for foods from contaminated areas are given in Tables A.3 and A.7, and A.4 and A.8, respectively. (See Appendix for Tables A.1-A.8.)

3.3 ANALYTICAL SUMMARY OF CADMIUM IN FOODS DATA

As in any large compilation of analytical data from diverse sources, instances of conflicting analyses are apparent in the tabulated data. Despite these irregularities, however, the tabulated data provide a basis for several general conclusions. Because of its almost universal presence in soils, cadmium is a common constituent of foods. In most foods the concentration is relatively low, less than 0.050 mg/kg, wet weight. Concentrations are greatest in shellfish, leafy vegetables, potatoes, grain and cereal products, and selected animal organs, particularly the kidney and the liver. Concentrations are greater for some, but not all, plant foods grown with cadmium-containing phosphate fertilizers and in soils containing moderately higher-than-normal levels of cadmium. Foods derived from plants grown near point sources or in highly contaminated soil generally contain high concentrations of the element. Point sources, such as nonferrous metal smelters, usually contaminate nearby crops more severely than the use of cadmium-containing phosphate fertilizers on crops grown in otherwise unpolluted soil. Nevertheless, the continued use of phosphate fertilizers, especially cadmium-rich western rock phosphate and cadmium-containing sludges, gives rise to serious concern about long-range cadmium buildup on agricultural soils. Diets chosen exclusively from foods produced in areas near point sources or in highly contaminated soils put users at great risk of exceeding recommended intake levels; however, no clear pattern of regional differences in concentration is apparent in foods produced in areas distant from point sources. Some observers have reported annual increases of cadmium in successive crops of certain plant foods, attributable to repeated or increased use of cadmium-containing fertilizers (Kjellstrom et al., 1975). This effect is not apparent in the data summarized here, nor is there a discernable increase in the cadmium content of foods due to canning or other food-processing operations. The latter observation supports a similar conclusion by Jelinek et al. (1975).

The concentration of cadmium in various categories of commercial foods produced in the United States during the last decade may be estimated from assays of Total Diet Study samples listed in Tables A.1 and A.2. Mean values of these composite samples, summarized in Table 2, indicate that most food groups contain less than 0.03 mg of cadmium per kilogram, wet weight. The potatoes, leafy vegetables, and grain and cereal groups usually contain greater concentrations than other groups, but even here the average does not exceed 0.05 mg of cadmium per kilogram, wet weight.

Table 2. Average and upper limit concentrations of cadmium in Total Diet Study samples, 1968-1974

Food category	Cadmium concentration (mg/kg, wet weight)	
	Mean	Upper limit
Beverages	<0.01	0.08
Dairy products	<0.01	0.14
Fruits	<0.01	0.07
Garden fruits	0.02	0.10
Grain and cereal	0.03	0.07
Leafy vegetables	0.04	0.40
Legume vegetables	<0.01	0.10
Meat, fish, and poultry	0.01	0.07
Oils, fats, and shortening	0.02	0.07
Potatoes	0.05	0.14
Root vegetables	0.02	0.31
Sugars and adjuncts	0.01	0.09

Sources: Duggan and Lipscomb, 1969; Corneliussen, 1972; Duggan and Corneliussen, 1972; Manske and Corneliussen, 1974; Mahaffey et al., 1975; Manske and Johnson, 1975, 1977.

A somewhat wider range of concentrations occurs when individual foods, rather than composite samples, are analyzed. Typical values for selected U.S. foods from uncontaminated areas are summarized in Table 3. Analytical results from some types of foreign foods from uncontaminated areas (identified by double asterisks) are included in this table to indicate the probable range of cadmium in U.S. food. In general, the concentration of cadmium in fresh milk is low, even in areas having contaminated soils. The high concentrations of cadmium in some human milk samples may reflect excessive cigarette smoking. Beef, pork, lamb, and chicken flesh typically contain only low concentrations of cadmium, as do eviscerated freshwater and marine fish. However, diets rich in the kidneys or livers of these animals may contain excessive quantities of cadmium. Habitual eaters of crabs, oysters, and other shellfish may also be at risk. In general, fruits such as apples, bananas, oranges, and pineapples are low in cadmium, as are such vegetables as beans, cucumbers, peas, and tomatoes. Leafy vegetables, such as cabbage, collards, lettuce, and spinach contain higher concentrations, particularly in outer leaves. Potatoes and grains, such as corn, oats, rice, and wheat, but not rye, are also rich sources of dietary cadmium.

In most foods the ranges of cadmium concentrations are narrow and reasonably consistent. However, surprisingly high concentrations are occasionally reported for drinking water and soft drinks. Nonpolluted natural waters usually contain less than 1 μg cadmium per liter and regular drinking water seldom exceeds 5 μg cadmium per liter, yet, concentrations up to 16,000 μg/liter have been reported in some samples of water and vending machine-dispensed soft drinks (Friberg et al., 1977). These extreme values are usually associated with circumstances in which soft or acidulated water has been in prolonged contact with galvanized pipe or plumbing fittings attached with cadmium-containing solders. In domestic plumbing systems, leachable cadmium is most likely to concentrate in the initial charge of water removed from the system each morning. Prudence suggests that this cadmium-charged tapwater be routinely used for utilitarian, rather than dietary, purposes.

4. ESTIMATED CADMIUM INTAKE FROM FOODS

Cadmium intake from food depends on the concentration of the element in the food and the amount of food ingested. Estimates of intake may thus be obtained by calculation if these factors are known, or by direct analysis of duplicate meals. Both techniques yield concordant results when applied with care.

4.1 TABULATED VALUES OF CADMIUM INTAKE FROM FOODS

Estimates of intake, primarily the calculated type, are summarized for foreign countries and the United States in Tables 1 and 4, respectively.

Table 3. Typical concentrations of cadmium in selected foods from uncontaminated areas

Food	Cadmium concentration (mg/kg, wet weight)
Apple	0.000-0.027**
Asparagus	0.01-0.04**
Baby food	0.003-0.08**
Banana	<0.01-0.02**
Bass	<0.010-0.060
Bean	0.003-0.24
Beef, flesh	<0.005-0.06**
Beef, kidney	0.22-1.00[a] 0.060-1.660**
Beef, liver	0.16-0.20[a] 0.005-0.300**
Beet, root	0.012-0.069**
Bread, white	0.01-0.110**
Butter	<0.01-0.07**
Cabbage	<0.01-0.15**
Catfish, channel	0.000-0.152
Cauliflower	0.003-0.021**
Cereal	0.01-0.09**
Cheese	0.015-0.110**
Chicken	0.01-0.05**
Clam	0.122-0.27
Cocoa	0.04-0.14**
Coffee	<0.01-0.08
Corn	0.005-0.075 0.013-0.8[b]
Crab	0.072-0.189 0.05-8.4**
Cucumber	0.0002-0.014**
Egg	0.01-0.04**
Fish, mixed species	0.02-0.08
Flounder	0.000-0.059
Flour, wheat	0.03-0.150[b]
Fruit	0.0002-0.029**
Lamb, flesh	0.01-0.03**
Lamb, kidney	0.02-2.8**
Lamb, liver	0.01-0.72**
Lettuce	0.005-0.040 0.84-1.2[b]
Lobster, tail	0.059-0.233
Margarine	<0.01-0.035**[a]
Meat, cold cuts	0.01-0.07**
Milk, whole, fresh	0.0007-0.037
Milk, human	0.0088-0.1335
Mussel	0.147-2.63
Oats, grain	0.01-0.28[b]
Onion	0.01-0.09**
Orange	0.002-0.029**
Oyster	0.05-7.80
Pea, green	0.001-0.009**
Pepper, sweet	0.015-0.043**[a]
Perch, yellow	0.019-0.073
Pineapple, canned	<0.01-0.03**
Pork, flesh	<0.01-0.05**
Pork, kidney	0.015-0.60[a] 0.07-2.088**
Pork, liver	0.01-1.72**
Potato	0.01-0.17**
Radish	0.66-1.54[b]
Rice	0.03-0.137**
Rye	<0.01-0.07**
Salmon	0.016-0.039
Scallop	0.040-3.19
Shrimp	0.000-0.200
Soft drinks	0.002-0.006**
Sole	0.007-0.026
Spinach	0.02-0.18**
Sugar	0.0016-0.03**
Tea, dried	0.01-0.14**
Tomato	<0.01-0.08**
Tuna	<0.01-0.139**
Vegetables, mixed	0.0002-0.13**
Wheat	0.07-0.15 0.005-0.136**
Wine	0.003-0.017**
Yam	0.03-0.05**[a]

[a] Limited number of observations.

[b] Dry basis.

**Uncontaminated foreign foods.

Source: Summarized from Tables 2 and 5.

Table 4. Estimates of cadmium intake from U.S. foods

Year	Estimated cadmium intake (μg/day)	Analytical method	Limit of detection (ppm)	Comments	Reference
1960	23	Sp	0.05	Calculated for 2300 calorie diet containing 100 g protein, 250 g carbohydrate, and 100 g fat, including flour and grains as main carbohydrate foods.	Schroeder and Balassa, 1961
1966	13[a]	AAS	0.02	Direct analysis of composited lunches (20) served 6th grade students in 300 U.S. schools. Range: 9-41 μg/lunch. Nearly 75% of samples were below limit of detection. These samples were assumed to contain 0.02 mg/kg in calculating the mean intake. The latter would be 4 μg/day if lunches below limit of detection had been assigned a cadmium concentration of zero.	Murphy et al., 1971
1968	26	AAS or P	0.01	Calculated for teenage male diet of 2922 g of food daily based on direct analysis of Total Diet Study samples involving 12 categories of composited food. Effect of compositing: very slight underestimation. Results reflect upper limit estimate for "normal" adult.	Mahaffey et al., 1975
1969	50	AAS or P	0.01		Duggan and Corneliussen, 1972
1970	38	AAS or P	0.01		Duggan and Corneliussen, 1972
1971	29	AAS or P	0.01		Mahaffey et al., 1975
1972	37	AAS or P	0.01		Mahaffey et al., 1975
1973	51	AAS or P	0.01		Mahaffey et al., 1975
1974	34	AAS or P	0.01		Mahaffey et al., 1975
1975	72	AAS or P	0.01	Calculated for teenage male diet, based on direct analysis of 41 individual foods and 12 categories of composited foods in the Total Diet Study program.	Jelinek et al., 1975

[a] Microgram cadmium per lunch.

4.2 ANALYTICAL SUMMARY OF CADMIUM INTAKE DATA

Estimates of cadmium intake from foods have been made by investigators in many countries, but considerable uncertainty continues to exist concerning even the approximate ranges of these data. Part of the difficulty is inherent in the problem, since national and personal diet preferences necessarily introduce a measure of variance into the data. Other variations occur because of differing premises among investigators. Analytical problems also contribute to data scatter. As a consequence, literature estimates of intake vary from 10 to about 500 μg/day. Probably the best estimates of intake from U.S. foods are those determined annually by FDA analysts from Total Diet Study samples (Duggan et al., 1966; Hopkins, 1975). Between 1968 and 1974 these estimated daily intakes varied from 26 to 51 μg/day. The average for this period was 38 μg, with no apparent trend in the data. The 1975 estimate (FY 1974 data), based on additional analyses of 41 individual foods, was 72 μg. Based on the 1973 Total Diet Study, the various classes of food contributed the following amounts (μg/day) and percentages, respectively, of the total dietary intake of cadmium: grain and cereal — 11.66 and 22.3; fruits — 9.38 and 18.3; potatoes — 9.11 and 17.8; beverages — 6.49 and 12.7; dairy products — 3.94 and 7.7; leafy vegetables — 3.18 and 6.2; meat, fish, and poultry — 2.49 and 4.9; garden fruits — 1.71 and 3.4; oil and fats — 1.36 and 2.7; root vegetables — 0.76 and 1.5; sugars and adjuncts — 0.68 and 13.0; and legume vegetables — 0.42 and 0.8 (Mahaffey et al., 1975).

It should be noted that Total Diet Study results are based on the appetite of an 18- to 19-year-old male, an assumption which overstates the food consumption of a "normal" adult nearly twofold (Duggan and Lipscomb, 1969). The Total Diet Study estimates of intake thus represent an upper limit, though not necessarily a doubled measure, of intake of cadmium from food for adults under average U.S. conditions. Considering these circumstances, it appears reasonable to assume that the average daily U.S. dietary intake probably lies within the range 30 to 50 μg. This estimate is slightly lower than the 40 to 70 μg range suggested by Fulkerson (1975), who assumed an exceptionally high value of 20 μg/day from water, and considerably less than the 50 to 100 μg/day range cited by Sanjour (1974). The estimate of 30 to 50 μg is somewhat higher than values reported for New Zealand, the United Kingdom, and Sweden, and less than some Japanese and Canadian values (Table 1) but is consistent with observed concentrations of cadmium in the renal cortex and liver of normal humans in these countries (Friberg et al., 1974, pp. 62-63). Our estimate of 30 to 50 μg is also consistent with results of Murphy et al. (1971) who measured an average of 13 μg of cadmium in 6000 duplicate lunches of 6th grade students in 1966.

The estimated U.S. daily dietary intake of 30 to 50 μg of cadmium is 42% to 88% of the recommended total tolerable limit of 400 to 500 μg/week (World Health Organization, 1972). This margin of safety is small and leaves little room for intake from other environmental or occupational sources. Ordinarily, inhalation of environmental air does not represent a significant fraction of the daily intake of individuals nonoccupationally exposed. Even under adverse conditions, daily intake in this manner probably amounts to only 2 μg or less. However, daily intake from tobacco smoking is likely to be more significant (Friberg et al., 1974, p. 21). Excessive cigarette smoking can contribute as much, or more, cadmium as dietary sources (Lewis et al., 1972; U.S. Environmental Protection Agency, 1975, p. 5-21). It thus appears entirely feasible for residents of polluted areas or for urban dwellers who are habitual eaters of cadmium-rich food and are heavy smokers to approach or exceed the recommended total tolerable limit of 400 to 500 μg of cadmium per week. Accordingly, every reasonable effort should be made to limit, or even reduce, further additions of cadmium to the environment. With respect to cadmium in food, it appears these efforts should be directed toward minimizing the use of fertilizers and sludges that contain high concentrations of cadmium on croplands. When soils known to contain abnormal amounts of cadmium must be used for food production, the soil pH should be maintained at 6.5 or above through regular applications of lime to immobilize the cadmium and minimize its uptake in plant products (Linnman et al., 1973; Keeney, 1976). When feasible, polluted soils should be planted with crops known to absorb minimal amounts of cadmium (Singh et al., 1975).

It should be noted that the foregoing comments were based on averaged cadmium intake data. Subsets of the sample group may experience intakes of cadmium considerably greater than averaged values. Yost (1978) conducted dietary intake studies on the 15- to 20-year-old U.S. male population, based on the FY 1974 FDA Heavy Metals in Food survey. He estimated that about 10% of the study population ingested more than 70 μg cadmium per day from a single food. These foods, together with estimates of the consuming population, are shown in Table 5.

5. ANALYTICAL METHODS

Although many methods have been developed for determining cadmium, the analysis of this element in food poses special problems, and only a limited number of techniques are normally used. The principal difficulty arises from the very low concentrations of cadmium, often only a few parts per billion, characteristically occurring in most samples. For such samples the method of analysis must be very sensitive if extensive preliminary concentration is to be avoided. The latter operation is usually laborious, time-consuming, and susceptible to processing errors. In addition, procedures requiring extensive preliminary concentration of samples are unlikely to be considered practical when large numbers of samples must be analyzed. In modern practice, when many samples are involved, almost all investigators determine cadmium in foods by conventional atomic absorption spectrometry (AAS). For the small fraction of samples requiring greater sensitivity, flameless atomic absorption spectrometry or an electrochemical method such as anodic stripping voltammetry (ASV) is frequently chosen. Emission spectroscopy (ES), neutron activation analysis (NT), and mass spectrometry (MS) are not generally methods of choice, but are occasionally used because of equipment availability. Spectrophotometric colorimetry, formerly the standard method of determining cadmium, is now rarely used because processing procedures are lengthy and sensitivity is low compared with AAS.

The principal features of the most important methods of determining cadmium are briefly described in the next subsections.

5.1 ATOMIC ABSORPTION SPECTROMETRY

In this analytical method a previously prepared solution of the sample is injected into a flame through which monochromatic light from a cadmium lamp is passed. Usually 228.8 nm radiation is used. The flame atomizes the sample and light from the lamp is selectively absorbed by the cadmium atoms as the latter are activated from the ground energy state to a higher electronic energy state. Absorption of the light is proportional to the concentration of cadmium in the injected sample. A photodetector measures the intensity of the radiation before and after passage through the flame; the difference is often expressed directly in concentration values.

Table 5. Estimates of dietary intake of cadmium from single foods by 15- to 20-year-old U.S. males

Food	Percent of population consuming food	Percent of consuming population ingesting more than 70 μg Cd/day
Beef liver	1.4	20
Hamburger	20	4.9
Fruit drinks	5.4	4.3
Chuck roast	17.5	3.9
Potatoes	72.4	3.3
Orange juice	15	3.0
Chicken	8.9	2.4
White flour	39.6	2.4
Eggs	25	2.3
White rice	4.8	2.3
Lettuce	30	2.1
Sugar, refined	48.5	2.1
Cornmeal	2.9	2.0
Milk	61	1.8
Bacon	27.7	1.7
Peaches	5.7	1.7
Beets	1.8	1.4
Breakfast cereal	22.4	1.4
Carrots	5.3	1.2
Tomatoes	13.5	1.2
Green beans	12.4	0.9
Applesauce	4.4	0.5
White bread	60.3	0.5
Butter	37	0.2
Margarine	28.5	0.1
Frankfurters	17.9	0.0
Pork and beans	6.9	0.0

Source: Yost, 1978.

The usual detection limit reported for atomic absorption spectrometry is about 0.01 mg/kg (Fulkerson and Goeller, 1973, p. 435) but greater sensitivity, comparable to the anodic stripping technique, can be achieved if the cadmium in the original sample is treated with a complexing agent and extracted into an appropriate organic solvent.

The extraction step is mandatory for certain types of samples. Early users of the atomic absorption technique believed that the method was essentially free of interferences, but subsequent investigators established that absorption of light was decreased by the presence of phosphate in concentrations greater than 0.01 *M*, and increased by sodium chloride in concentrations greater than 0.01 *M*. Consequently, allowance must be made for the effects of these impurities, or the impurities must be removed from the sample, if valid measurements are to be obtained. The results of several extensive studies of cadmium in U.S. foods are questionable because of such interferences (Friberg et al., 1974, p. 5).

Conventional (flame) atomic absorption techniques normally convert less than 10% of the sample cadmium to the atomic state. In some instances, efficiency and sensitivity can be greatly improved by replacing the flame with a carbon furnace, graphite rod, or tantalum ribbon on which the sample is sequentially dried, ashed (if necessary), and heated to incandescence. However, smoke or salt particles produced during the heating steps can cause scattering and attenuation of light intensities. In addition, flameless techniques generally produce an absorbance peak of relatively short duration, compared to the steady signal obtained from a flame. Nevertheless, direct analysis of cadmium at the 1 to 5 μg/kg level is now feasible for some samples (Instrumentation for Environmental Monitoring — Biomedical, 1973, p. 14; Friberg et al., 1977). The flameless atomic absorption technique may be used to analyze all types of samples, but it is probably most effective for direct analysis of solid biological and environmental samples without prior processing.

5.2 ANODIC STRIPPING VOLTAMMETRY

Cadmium can be determined by a variety of electrochemical techniques, most of which may be described as variants of the older, well-known polarograph method (Osteryoung and Osteryoung, 1972; Shuman and Woodward, 1972; Kopp, 1975). Of these, anodic stripping voltammetry appears to be most sensitive. In the latter method cadmium from the sample is electrodeposited under controlled conditions into a hanging drop of mercury or a thin-film mercury electrode. The resulting cadmium amalgam is then anodically stripped using one of several techniques such as voltammetry with constant linearly varying potential. The amount of current required for stripping is directly proportional to the concentration of cadmium in the initial sample. Typical conditions for analysis of cadmium in foods include use of an ammonia-ammonium chloride electrolyte with an electrodeposition time of 10 min, a plating potential of -1.4 V, and a dissolution scan rate of 4 V/min to an anodic limit of -0.30 V (Hundley and Warren, 1970). Zinc and copper may interfere, but their influence can be minimized or eliminated by simple electrochemical techniques. The minimum sensitivity of anodic stripping voltammetry is determined by the reagent blank. Under favorable conditions solutions containing 1 ppb cadmium can be analyzed with an accuracy of about ±10% (Fulkerson and Goeller, 1973, p. 433). Because of this extraordinary sensitivity many samples can be analyzed without preconcentration. Anodic stripping voltammetry or closely related electrochemical methods are frequently the method of choice for that small fraction of food samples in which the concentration of cadmium is too low to be analyzed conveniently by the AAS technique (Ediger and Coleman, 1972; Cornell and Pallansch, 1973; Gajan et al., 1973; Cunningham, 1975).

5.3 SPECTROPHOTOMETRIC COLORIMETRY

Spectrophotometric colorimetry is based on measuring the amount of monochromatic light absorbed by a specific molecular complex of cadmium. Absorbed light is related to the metal concentration in the sample by means of a previously obtained calibration plot. Many different molecular complexes can be used, but the most popular is the red cadmium dithizonate which has maximum absorbance at 518 nm. Spectrophotometric colorimetry can be sensitive, specific, and accurate. With care it can be used in the low parts-per-billion range (Fulkerson and Goeller, 1973, p. 433). However, despite these advantages, the method is both tedious and time-consuming; consequently, it has been little used for determining cadmium in foods since the introduction of AAS.

5.4 EMISSION SPECTROSCOPY

In emission spectroscopy, prepared samples are excited with a flame, arc, spark, or plasma. The resulting light is dispersed with a monochromator and characteristic emission lines are recorded electronically or photographically. The concentration of each element is determined by comparing the intensity of its emission line with that of an internal or external standard. For low concentrations of cadmium, such as occur in most food samples, the 228.8 nm line is usually monitored. With plasma excitation the detection limit is near the parts-per-billion level (Kopp, 1975), but the sensitivity of earlier spectroscopic methods was much poorer (Friberg et al., 1974, p. 4). Emission spectroscopy is often utilized for multielement analyses, particularly for unprocessed solid samples, because it determines many elements simultaneously, but since the development of AAS, the method has only rarely been used to determine cadmium in food.

5.5 NEUTRON ACTIVATION ANALYSIS

When food samples are irradiated in a nuclear reactor many of the constituent nuclides absorb neutrons and form radioactive isotopes that can be identified and quantified by instrumental analysis. The amount of radioactive isotope formed is proportional to the concentration and cross section of the parent element and the flux of irradiating neutrons. The concentrations of the nonradioactive parent element and the radioactive daughter nuclide are usually related by measuring the activities of standard samples irradiated simultaneously with the unknown. For analysis of cadmium, the most commonly used reaction is $^{114}\text{Cd}(\eta,\gamma)\ ^{115}\text{Cd}$. Sodium and chlorine cause serious interference and must be removed if they occur in high concentrations (Kopp, 1975). About 1 to 100 μg cadmium can be determined nondestructively in matrices that do not activate significantly, but sensitivities several orders of magnitude greater than this can be achieved if cadmium is chemically separated from interfering activities (Fulkerson and Goeller, 1973, p. 437). All forms of neutron activation analysis are more time-consuming and expensive than AAS; consequently, the technique is rarely used to determine cadmium in foods.

5.6 MASS SPECTROMETRY

Cadmium can be determined by exciting a sample with a radio frequency spark, followed by spectrometric measurement of the resulting cadmium ions according to their mass. This technique is applicable to virtually any matrix, but the method is insensitive (∿20 ppm) and only semiquantitative (∿30%) because of erratic emission of ions from such sources. The sensitivity and accuracy can be greatly improved by use of the isotope dilution technique in which isotopic ratios of the sample are measured before and after addition of known quantities of isotopically enriched cadmium. The method requires complete equilibration of the added cadmium with that of the original sample but quantitative extraction and recovery of the mixed cadmium is unnecessary since only isotopic ratios need be measured. Typically, the isotope dilution procedure has a sensitivity of about 1 ppb and an accuracy of about ±5%. The procedure is more time-consuming and expensive than AAS or ASV and is not often used to determine cadmium in foods; however, its use for monitoring faster and less expensive methods has been recommended (Fleischer et al., 1974).

REFERENCES

1. Allaway, W. 1968. Agronomic Controls Over the Environmental Cycling of Trace Elements. Adv. Agron. 20:235-274.

2. Andersson, A. 1976. On the Influence of Manure and Fertilizers on the Distribution and Amounts of Plant-Available Cd in Soils. Swed. J. Agric. Res. 6:27-36.

3. Anke, M., A. Hennig, M. Grun, B. Groppel, and H. Ludke. 1976. Cadmium and Its Influence on Plants, Animals, and Man with Regard to Geological and Industrial Conditions. In: Trace Substances in Environmental Health — X, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 105-111.

4. Ayling, G. 1974. Uptake of Cadmium, Zinc, Copper, Lead, and Chromium in the Pacific Oyster, *Crassostrea Gigas*, Grown in the Tamar River, Tasmania. Water Res. 8:729-738.

5. Beavington, F. 1975. Heavy Metal Contamination of Vegetables and Soil in Domestic Gardens Around a Smelting Complex. Environ. Pollut. 9:211-217.

6. Benenati, F. 1974. An Assessment of the Effects of Zinc, Lead, Cadmium, and Arsenic in Soil, Vegetation, and Water Resources Surrounding a Zinc Smelter. Ph.D. Dissertation. University of Oklahoma, Norman, Okla. 110 pp.

7. Bohn, A., and R. McElroy. 1976. Trace Metals (As, Cd, Cu, Fe, and Zn) in Arctic Cod, *Boreogadus saida*, and Selected Zooplankton from Strathcona Sound, Northern Baffin Island. J. Fish. Res. Board Can. 33:2836-2840.

8. Brooks, R., and M. Rumsby. 1965. The Biogeochemistry of Trace Element Uptake by Some New Zealand Bivalves. Limnol. Oceanogr. 10:521-527.

9. Brooks, R., and D. Rumsey. 1974. Heavy Metals in Some New Zealand Commercial Sea Fishes. N.Z. J. Mar. Freshwater Res. 8(1):155-166.

10. Bruhn, J., and A. Franke. 1974. Lead and Cadmium in California Milk. J. Dairy Sci. 57(5):588.

11. Bruhn, J., and A. Franke. 1975. Trace Metals and Protein in California Market Milk. J. Dairy Sci. 58(5):788.

12. Buell, G. 1975. Some Biochemical Aspects of Cadmium Toxicology. J. Occup. Med. 17(3):189-195.

13. Chellapan, S., K. Pedersen, and H. Plaza. 1976. Mercury and Cadmium Concentrations in Milk in Puerto Rico. J. Radioanal. Chem. 32:173-178.

14. Childs, E., and J. Gaffke. 1974. Lead and Cadmium Content of Selected Oregon Groundfish. J. Food Sci. 39:863-864.

15. Collet, P. 1975. Estimation of Heavy Metals in Foods by Inverse Polarography. Dtsch. Lebensm. Rundsch. 71(7):249-252.

16. Corneliussen, P. 1972. Pesticide Residues in Total Diet Samples (VI). Pestic. Monit. J. 5(4):313-330.

17. Cornell, D., and M. Pallansch. 1973. Cadmium Analysis of Dried Milk by Pulse Polarographic Techniques. J. Dairy Sci. 56(12): 1479-1485.

18. Crossmann, G., and W. Egels. 1975. Research Concerning the Cadmium Contents of Single Feedstuffs. Landwirtsch. Forsch. 28:164-173.

19. Cunningham, H. 1975. Report on Metals and Other Elements in Foods. J. Assoc. Off. Anal. Chem. 58(2):237.

20. Dorn, C., J. Pierce, G. Chase, and P. Phillips. 1973. Cadmium, Copper, Lead, and Zinc in Blood, Milk, Muscle, and Other Tissues of Cattle from an Area of Multiple-Source Contamination. In: Proceedings of the Seventh Annual Conference on Trace Substances in Environmental Health, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 191-203.

21. Dorn, C., J. Pierce, G. Chase, and P. Phillips. 1975. Environmental Contamination by Lead, Cadmium, Zinc, and Copper in a New Lead-Producing Area. Environ. Res. 9:159-172.

22. Duggan, R., H. Barry, and L. Johnson. 1966. Pesticide Residues in Total-Diet Samples. Science 151:101-104.

23. Duggan, R., and P. Corneliussen. 1972. Dietary Intake of Pesticide Chemicals in the United States (III), June 1968-April 1970. Pestic. Monit. J. 5(4):331-341.

24. Duggan, R., and G. Lipscomb. 1969. Dietary Intake of Pesticide Chemicals in the United States (II), June 1966-April 1968. Pestic. Monit. J. 2(4):153-162.

25. Duggan, R., and F. McFarland. 1967. Assessments Include Raw Food and Feed Commodities, Market Basket Items Prepared for Consumption, and Meat Samples Taken at Slaughter. Pestic. Monit. J. 1(1):1-5.

26. Ediger, R., and R. Coleman. 1972. An Evaluation of Anodic Stripping Voltammetry and Non-Flame Atomic Absorption as Routine Analytical Tools. In: Proceedings of the Sixth Annual Conference on Trace Substances in Environmental Health, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 279-283.

27. Essing, H.-G., K.-H. Schaller, D. Szadowski, and G. Lennert. 1969. Usual Cadmium Loading through Foods and Drinks. Arch. Hyg. 153: 490-495.

28. Eustace, I. 1974. Zinc, Cadmium, Copper, and Manganese in Species of Finfish and Shellfish Caught in the Derwent Estuary, Tasmania. Aust. J. Mar. Freshwater Res. 25:209-220.

29. Fassett, D. 1975. Cadmium: Biological Effects and Occurrence in the Environment. In: Annual Review of Pharmacology, Vol. 15, H. Elliot, R. George, and R. Okun, eds. Annual Reviews. Palo Alto, Calif. pp. 425-435.

30. Fleischer, M., A. Sarofim, D. Fassett, P. Hammond, H. Shacklette, I. Nisbet, and S. Epstein. 1974. Environmental Impact of Cadmium: A Review by the Panel on Hazardous Trace Substances. Environ. Health Persp. Experimental Issues No. 7. pp. 253-323.

31. Fowler, B., R. Fay, R. Walter, R. Willis, and W. Gutknecht. 1975. Levels of Toxic Metals in Marine Organisms Collected from Southern California Coastal Waters. Environ. Health Persp. 12:71-76.

32. Friberg, L. 1948. Proteinuria and Emphysema Among Workers Exposed to Cadmium and Nickel Dust in a Storage Battery Plant. In: Proceedings of the Ninth International Congress of Industrial Medicine 9:641-644.

33. Friberg, L. 1950. Health Hazards in the Manufacture of Alkaline Accumulators with Special Reference to Cadmium Poisoning. Acta Med. Scand. 138: Suppl. 240. 123 pp.

34. Friberg, L., T. Kjellstrom, G. Nordberg, and M. Piscator. 1975. Cadmium in the Environment — III. EPA-650/2-75-049. Washington, D.C.

35. Friberg, L., G. Nordberg, and M. Piscator. 1977. Cadmium. In: Toxicity of Metals, Volume II. EPA-600/1-77-022, U.S. Environmental Protection Agency. Health Effects Research Laboratory, Research Triangle Park, N.C. pp. 124-163.

36. Friberg, L., M. Piscator, G. Nordberg, and T. Kjellstrom. 1974. Cadmium in the Environment, 2nd ed. CRC Press, Cleveland, Ohio. 248 pp.

37. Fuchs, G., J. Haegglund, and L. Jorhem. 1976. The Levels of Lead, Cadmium, and Zinc in Vegetables. Var Foeda 28:160-167.

38. Fulkerson, W. 1975. Cadmium — The Dissipated Element — Revisited. Second National Conference on Complete Water Reuse, May 4-8, 1975, Chicago, Ill. 24 pp.

39. Fulkerson, W., and H. Goeller, eds. 1973. Cadmium: The Dissipated Element. ORNL-NSF-EP-21, Oak Ridge National Laboratory, Oak Ridge, Tenn. 473 pp.

40. Gajan, R., J. Gould, J. Watts, and J. Fiorino. 1973. Collaborative Study of a Method for the Atomic Absorption Spectrometric and Polarographic Determination of Cadmium in Food. J. Assoc. Off. Anal. Chem. 56(4):876-881.

41. Garcia, W., C. Blessin, and G. Inglett. 1974*a*. Heavy Metals in Whole Kernel Dent Corn Determined by Atomic Absorption. Cereal Chem. 51:788-797.

42. Garcia, W., C. Blessin, and G. Inglett. 1974*b*. Heavy Metals in Food Products from Corn. Cereal Chem. 51:779-787.

43. Gilmartin, M., and N. Revelante. 1975. The Concentration of Mercury, Copper, Nickel, Silver, Cadmium, and Lead in the Northern Adriatic Anchovy, *Engraulis encrasicholus*, and Sardine, *Sardina pilchardus*. Fish. Bull. 73(1):193-200.

44. Guthrie, B. 1973. Daily Dietary Intakes of Zinc, Copper, Manganese, Chromium, and Cadmium by Some New Zealand Women. Proc. Univ. Otago Med. Sch. 51:47-49.

45. Guthrie, B. 1975. Chromium, Manganese, Copper, Zinc, and Cadmium Content of New Zealand Foods. N.Z. Med. J. 82(554):418-424.

46. Hamilton, E., and M. Minski. 1973. Abundance of the Chemical Elements in Man's Diet and Possible Relations with Environmental Factors. Sci. Total Environ. 1:375-394.

47. Hardisty, M., S. Kartar, and M. Sainsbury. 1974. Dietary Habits and Heavy Metal Concentrations in Fish from the Severn Estuary and Bristol Channel. Mar. Pollut. Bull. 5(4):61-63.

48. Harms, U. 1975. The Levels of Heavy Metals (Mn, Fe, Co, Ni, Cu, Zn, Cd, Pb, Hg) in Fish from Onshore and Offshore Waters of the German Bight. Z. Lebensm. Unters. Forsch. 157:125-132.

49. Havre, G., B. Underdal, and C. Christiansen. 1973. Cadmium Concentrations in Some Fish Species from a Coastal Area in Southern Norway. Oikos 24:155-157.

50. Hemphill, D. 1974. Accumulation of Toxic Heavy Metals by Plants in Missouri's Lead Belt. In: Trace Element Metabolism in Animals — 2, W. Hoekstra, J. Suttie, H. Ganther, and W. Mertz, eds. University Park Press, Baltimore, Md. pp. 458-460.

51. Hemphill, D., C. Marienfeld, R. Reddy, W. Heidlage, and J. Pierce. 1973. Toxic Heavy Metals in Vegetables and Forage Grasses in Missouri's Lead Belt. J. Assoc. Off. Anal. Chem. 56(4):994-998.

52. Hopkins, H. 1975. Finding Out What Else You Eat. FDA Consumer 9:8-15.

53. Huffman, E., and J. Hodgson. 1973. Distribution of Cadmium and Zinc/Cadmium Ratios in Crops from 19 States East of the Rocky Mountains. J. Environ. Qual. 2(2):289-291.

54. Hundley, H., and E. Warren. 1970. Determinations of Cadmium in Total Diet Samples by Anodic Stripping Voltammetry. J. Assoc. Off. Anal. Chem. 53(4):705-709.

55. Huschenbeth, E., and U. Harms. 1975. On the Accumulation of Organochlorine Pesticides, PCB, and Certain Heavy Metals in Fish and Shellfish from Thai Coastal and Inland Waters. Arch. Fischereiwiss. 26(3):109-122.

56. Hutchinson, T., M. Czuba, and L. Cunningham. 1974. Lead, Cadmium, Zinc, Copper, and Nickel Distributions in Vegetables and Soils of an Intensely Cultivated Area and Levels of Copper, Lead, and Zinc in the Growers. In: Trace Substances in Environmental Health — VIII, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 81-93.

57. Ikebe, K., Y. Tanaka, R. Tanaka, and N. Kunita. 1977*a*. Heavy Metals Contents in Processed Foods. Shokuhin Eiseigaku Zasshi 18(1):62-74.

58. Ikebe, K., Y. Tanaka, R. Tanaka, and N. Kunita. 1977*b*. Contents of Heavy Metals in Fishes, Shellfishes, Meats, Poultries, and Whales. Shokuhin Eiseigaku Zasshi 18(1):86-97.

59. Instrumentation for Environmental Monitoring — Biomedical, Vol. 4. 1973. Pub. No. LBL-1, Lawrence Berkeley Laboratory, Berkeley, Calif.

60. Jaakkola, T., H. Takahashi, and J. Miettinen. 1973. Cadmium Content in Sea Water, Bottom Sediment, Fish, Lichen, and Elk in Finland. In: Environmental Quality and Safety, Vol. II. Academic Press, N.Y. pp. 230-237.

61. Jelinek, C., K. Mahaffey, and P. Corneliussen. 1975. Establishment of Regulatory Levels for Heavy Metals in Foods in the United States, Vol. 1. In: Symposium Proceedings of the International Conference on Heavy Metals in the Environment, October 27-31, 1975, Toronto, Canada. pp. 173-180.

62. Jeng, S., and Y. Huang. 1973. Heavy Metal Contents in Taiwan's Cultured Fish. Bull. Inst. Zool. Acad. Sin. 12(2):79-85.

63. Johnson, R., and D. Manske. 1976. Pesticide Residues in Total Diet Samples (IX). Pestic. Monit. J. 9(4):157-169.

64. Jonsson, H. 1976. Determination of Lead and Cadmium in Milk with Modern Analytical Methods. Z. Lebensm. Unters. Forsch. 160:1-10.

65. Keeney, D. 1976. Environmental Impact of Cadmium and Other Heavy Metals from Land-Applied Sewage Sludge. PB-258643/6SL. Wisconsin University, Madison, Wis. 38 pp.

66. Kirkham, M. 1975. Trace Elements in Corn Grown on Long-Term Sludge Disposal Site. Environ. Sci. Technol. 9(8):765-768.

67. Kirkpatrick, D., and D. Coffin. 1973. Cadmium, Lead, and Mercury Content of Various Cured Meats. J. Sci. Food Agric. 24:1595-1598.

68. Kirkpatrick, D., and D. Coffin. 1974. The Trace Metal Content of Representative Canadian Diets in 1970 and 1971. Can. Inst. Food Sci. Technol. J. 7(1):56-58.

69. Kirkpatrick, D., and D. Coffin. 1975. Trace Metal Content of Chicken Eggs. J. Sci. Food Agric. 26:99-103.

70. Kjellstrom, T., B. Lind, L. Linnman, and C. Elinder. 1975. Variation of Cadmium Concentration in Swedish Wheat and Barley. Arch. Environ. Health 31:321-328.

71. Kjellstrom, T., B. Lind, L. Linnman, and G. Nordberg. 1974. A Comparative Study on Methods for Cadmium Analysis of Grain with an Application to Pollution Evaluation. Environ. Res. 8:92-106.

72. Kjellstrom, T., K. Shiroishi, and P. Evrin. 1977. Urinary β_2-Microglobulin Excretion Among People Exposed to Cadmium in the General Environment. Environ. Res. 13:318-344.

73. Kopfler, F., and J. Mayer. 1973. Concentrations of Five Trace Metals in the Waters and Oysters (*Crassostrea virginica*) of Mobile Bay, Alabama. Proc. Nat. Shellfish. Assoc. 63:27-34.

74. Kopp, J. 1975. Current Status of Analytical Methodology for Trace Metals, Vol. 1. In: Symposium Proceedings of the International Conference on Heavy Metals in the Environment, October 27-31, 1975, Toronto, Canada. 152 pp.

75. Kreuzer, W., B. Sansoni, W. Kracke, and P. Wissmath. 1975. Cadmium in the Flesh and Organs of Livestock. Fleischwirtschaft 55(3): 387-396.

76. Kropf, R., and M. Geldmacher-v. Mallinckrodt. 1968. The Cadmium Content of Foods and Daily Intake. Arch. Hyg. Bakteriol. 152: 218-224.

77. Lagerwerff, J., and D. Brower. 1974. Effect of a Smelter on the Agricultural Conditions in the Surrounding Environment. In: Proceedings of the Eighth Annual Conference on Trace Substances in Environmental Health, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 203-212.

78. Laugel, P., D. Wencker, D. Weill, and M. Hasselmann. 1976. Study of the Contamination of Foods by Cadmium: II. Results of a Regional Investigation of Different Food Groups. Ann. Falsif. Expert. Chim. 69:489-495.

79. Lener, J., and B. Bibr. 1970. Cadmium Content in Some Foodstuffs in Respect of Its Biological Effects. Vitalst. Zivilsationskr. 15:139-141.

80. Lewis, G., W. Jusko, L. Coughlin, and S. Hartz. 1972. Cadmium Accumulation in Man: Influence of Smoking, Occupation, Alcoholic Habit, and Disease. J. Chronic Dis. 25:717-726.

81. Linnman, L., A. Andersson, K. Nilsson, B. Lind, T. Kjellstrom, and L. Friberg. 1973. Cadmium Uptake by Wheat from Sewage Sludge Used as a Plant Nutrient Source. Arch. Environ. Health 27:45-47.

82. Lovett, R., W. Gutermann, I. Pakkala, W. Young, D. Lisk, G. Burdick, and E. Harris. 1972. A Survey of the Total Cadmium Content of 406 Fish from 49 New York State Fresh Waters. J. Fish. Res. Board Can. 29(9):1283-1290.

83. Mackay, N., R. Williams, J. Kacprzac, M. Kazacos, A. Collins, and F. Auty. 1975. Heavy Metals in Cultivated Oysters (*Crassostrea commercialis - Saccostrea cucullata*) from the Estuaries of New South Wales. Aust. J. Mar. Freshwater Res. 26:31-46.

84. Mahaffey, K., P. Corneliussen, C. Jelinek, and J. Fiorina. 1975. Heavy Metal Exposure from Foods. Environ. Health Persp. 12:63-69.

85. Manske, D., and P. Corneliussen. 1974. Pesticide Residues in Total Diet Samples (VII). Pestic. Monit. J. 8(2):110-124.

86. Manske, D., and R. Johnson. 1975. Pesticide Residues in Total Diet Samples (VIII). Pestic. Monit. J. 9(2):94-105.

87. Manske, D., and R. Johnson. 1977. Pesticide and Other Chemical Residues in Total Diet Samples (X). Pestic. Monit. J. 10(4):134-148.

88. Mathis, B., and N. Kevern. 1975. Distribution of Mercury, Cadmium, Lead, and Thallium in a Eutrophic Lake. Hydrobiologia 46(2):207-222.

89. Michels, S., G. Crossman, and G. Scholl. 1974. On the Contamination of Foods with Heavy Metals. Staub Reinhalt. Luft (translation) 34(1):26-28.

90. Miller, G., M. Wylie, and D. McKeown. 1976. Cadmium Exposure and Renal Accumulation in an Australian Urban Population. Med. J. Aust. 1:20-23.

91. Ministry of Agriculture, Fisheries, and Food. 1973. Working Party on the Monitoring of Foodstuffs for Heavy Metals, Fourth Report. Survey of Cadmium in Food. Her Majesty's Stationary Office, London. 31 pp.

92. Murphy, E., L. Page, and B. Watt. 1971. Trace Minerals in Type A School Lunches. J. Am. Diet. Assoc. 53(2):115-122.

93. Murphy, E., B. Watt, and L. Page. 1971. Regional Variations in Vitamin and Trace Element Content of Type A School Lunches. In: Proceedings of the Fourth Conference on Trace Substances in Environmental Health, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 194-205.

94. Murthy, G., and U. Rhea. 1968. Cadmium and Silver Content of Market Milk. J. Dairy Sci. 51(4):610-613.

95. Murthy, G., and U. Rhea. 1971. Cadmium, Copper, Iron, Lead, Manganese, and Zinc in Evaporated Milk, Infant Products, and Human Milk. J. Dairy Sci. 54(7):1001-1005.

96. Murthy, G., U. Rhea, and J. Peeler. 1971. Levels of Antimony, Cadmium, Chromium, Cobalt, Manganese, and Zinc in Institutional Total Diets. Environ. Sci. Technol. 5(5):436-442.

97. Nielsen, S. 1975. Cadmium in New Zealand Dredge Oysters: Geographic Distribution. Int. J. Environ. Anal. Chem. 4:1-7.

98. Osteryoung, J., and R. Osteryoung. 1972. Pulse Polarographic Analysis of Toxic Heavy Metals. Am. Lab. 4:8-16.

99. Perry, H., G. Thind, and E. Perry. 1976. The Biology of Cadmium. Med. Clin. North Am. 60(4):759-769.

100. Pfeilsticker, K., and C. Markard. 1975. Cadmium, Lead, and Zinc Content of Fruits and Vegetables from Gardens in Industrial Region. Z. Lebensm. Unters. Forsch. 158:129-136.

101. Pike, E., L. Graham, and M. Fogden. 1975. An Appraisal of Toxic Metal Residue in the Soils of a Disused Sewage Farm. J. Assoc. Public Anal. 13:48-63.

102. Pillay, K., C. Thomas, Jr., and C. Hyche. 1973. Neutron Activation Analysis of Some of the Biologically Active Trace Elements in Fish. In: Proceedings of the Seventh Annual Conference on Trace Substances in Environmental Health, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 415-420.

103. Pinkerton, C., J. Creason, C. Shy, D. Hammer, R. Buechley, and G. Murthy. 1972. Cadmium Content of Milk and Cardiovascular Disease Mortality. In: Proceedings of the Fifth Symposium on Trace Substances in Environmental Health, D. Hemphill, ed. University of Missouri, Columbia, Mo. pp. 285-292.

104. Pinkerton, C., D. Hammer, K. Bridbord, J. Creason, J. Kent, and G. Murthy. 1972. Human Milk as a Dietary Source of Cadmium and Lead. In: Proceedings of the Sixth Annual Conference on Trace Substances in Environmental Health, University of Missouri, Columbia, Mo. pp. 39-43.

105. Pommez, P., and M. Clarke. 1975. Trace Elements in Sugars. ARS-S-51. U.S. Agric. Res. Serv. South. Reg. pp. 40-46.

106. Portmann, J. 1972. The Levels of Certain Metals in Fish from Coastal Waters Around England and Wales. Aquaculture 1:91-96.

107. Ratkowsky, D., S. Thrower, I. Eustace, and J. Olley. 1974. A Numerical Study of the Concentration of Some Heavy Metals in Tasmanian Oysters. J. Fish. Board Can. 31(7):1165-1171.

108. Ratsch, H. 1974. Heavy Metal Accumulation in Soil and Vegetation from Smelter Emissions. EPA-660/3-74-012, U.S. Environmental Protection Agency, Corvallis, Ore. 24 pp.

109. Rautu, R., and A. Sporn. 1970. Contributions to the Determination of Cadmium Supplied by Foods. Nahrung 14:25-31.

110. Reynolds, C., and E. Reynolds. 1971. Cadmium in Crabs and Crabmeat. J. Assoc. Public Anal. 9(4):112-115.

111. Rodriguez, J. 1973. Determination of Metal Contamination in Puerto Rican Foods Using Instrumental Neutron Activation Analysis. TID-26452. M.S. Thesis. University of Puerto Rico, Mayaguez, Puerto Rico. 44 pp.

112. Romeril, M., and M. Davis. 1976. Trace Metal Levels in Eels Grown in Power Station Cooling Water. Aquaculture 8:139-149.

113. Ronk, R. 1971. Heavy Metals in United States Fish. Trans. North Am. Wildl. Nat. Resour. Conf. 36:133-138.

114. Roth, I., and H. Hornung. 1977. Heavy Metal Concentrations in Water, Sediments, and Fish from Mediterranean Coastal Area, Israel. Environ. Sci. Technol. 11(3):265-269.

115. Sanjour, W. 1974. Cadmium and Environmental Policy (draft). Office of Water and Hazardous Materials, U.S. Environmental Protection Agency, Washington, D.C. 22 pp.

116. Schroeder, H., and J. Balassa. 1961. Abnormal Trace Metals in Man: Cadmium. J. Chronic Dis. 14(1):236-258.

117. Schroeder, H., and J. Balassa. 1963. Cadmium: Uptake by Vegetables from Superphosphate in Soil. Science 140:819-820.

118. Schroeder, H., A. Nason, I. Tipton, and J. Balassa. 1967. Essential Trace Metals in Man: Zinc. Relation to Environmental Cadmium. J. Chronic Dis. 20:179-210.

119. Sharma, R., and J. Shupe. 1977. Lead, Cadmium, and Arsenic Residues in Animal Tissues in Relation to Those in Their Surrounding Habitat. Sci. Total Environ. 7:53-62.

120. Shuman, M., and G. Woodward. 1973. Analysis of Cadmium, Zinc, Copper, and Lead in Human Tissues by Anodic Stripping Voltammetry. In: Proceedings of the Sixth Annual Conference on Trace Substances in Environmental Health. University of Missouri, Columbia, Mo. pp. 269-277.

121. Singh, R., R. Keefer, and D. Horvath. 1975. Can Soils Be Used for Sewage Sludge Disposal? Compost Sci. 16(2):22-25.

122. Snodin, D. 1973. Lead and Cadmium in Baby Foods. J. Assoc. Public Anal. 11:112-119.

123. Somers, E. 1971. Heavy Metals in Foods. In: International Symposium on Identification and Measurement of Environmental Pollutants, Ottawa, Canada.

124. Stickney, R., H. Windom, D. White, and F. Taylor. 1975. Heavy Metal Concentrations in Selected Georgia Estuarine Organisms with Comparative Food-Habit Data. In: Mineral Cycling in Southeastern Ecosystems, F. Howell, J. Gentry, and M. Smith, eds. Augusta, Ga. pp. 257-267.

125. Takijima, Y., and F. Katsumi. 1973. Cadmium Contamination of Soils and Rice Plants Caused by Zinc Mining: I. Production of High Cadmium Rice on the Paddy Fields in Lower Reaches of the Mine Station. Soil Sci. Plant Nutr. 19(1):29-38.

126. Talbot, V., R. Magee, and M. Hussain. 1976. Cadmium in Port Phillip Bay Mussels. Mar. Pollut. Bull. 7(5):84-86.

127. Tanaka, Y., K. Ikebe, R. Tanaka, and N. Kunita. 1977. Extents and Average Contents of Heavy Metals in Vegetable Foods. Shokuhin Eiseigaku Zasshi 18(1):75-85.

128. Thomas, B., J. Roughan, and E. Watters. 1972. Lead and Cadmium Content of Some Vegetable Foodstuffs. J. Sci. Food Agric. 23:1493-1498.

129. Thomas, B., J. Roughan, and E. Watters. 1973. Lead and Cadmium Content of Some Canned Fruits and Vegetables. J. Sci. Food Agric. 24:447-449.

130. Thornton, I., and J. Webb. 1975. Trace Elements in Soils and Surface Waters Contaminated by Past Metalliferous Mining in Parts of England. In: Proceedings of the Ninth Annual Conference on Trace Substances in Environmental Health, University of Missouri, Columbia, Mo. pp. 77-88.

131. Thrower, S., and I. Eustace. 1973. Heavy Metal Accumulation in Oysters Grown in Tasmanian Waters. Food Technol. Aust. 25:546-553.

132. Tiller, K., and M. de Vries. 1977. Contamination of Soils and Vegetables Near the Lead-Zinc Smelter, Port Pirie, by Cadmium, Lead, and Zinc. Search 8(3):78-79.

133. Tipton, I., and P. Stewart. 1970. Patterns of Elemental Excretion in Long-Term Balance Studies. II. In: Internal Dosimetry Health Physics Division, Annual Progress Report. ORNL-4446, Oak Ridge National Laboratory, Oak Ridge, Tenn. p. 303.

134. Tong, S., W. Gutenmann, D. Lisk, G. Burdick, and E. Harris. 1972. Trace Metals in New York State Fish. N.Y. Fish Game J. 19(2):123-131.

135. Tsuchiya, K. 1969. Causation of Ouch-Ouch Disease — An Introductory Review: I. Nature of the Disease. Keio J. Med. 18:181-194.

136. Tsushida, T., and T. Takeo. 1977. Zinc, Copper, Lead, and Cadmium Contents in Green Tea. J. Sci. Food Agric. 28:255-258.

137. U.S. Environmental Protection Agency. 1975. Scientific and Technical Assessment Report on Cadmium. EPA-600/6-75-003. Washington, D.C.

138. Van Loon, J. 1975. How Useful Are Environmental Chemical Data? In: Symposium Proceedings, International Conference on Heavy Metals in the Environment, Vol. 1. Toronto, Canada. 152 pp.

139. Vattuone, G., K. Griggs, D. McIntyre, J. Littlepage, and F. Harrison. 1976. Cadmium Concentration in Rock Scallops in Comparison with Some Other Species. Lawrence Livermore Laboratory Report UCRL-52022. National Technical Information Service, Springfield, Va.

140. Walsh, D., B. Berger, and J. Bean. 1977. Residues in Fish, Wildlife, and Estuaries. Mercury, Arsenic, Lead, Cadmium, and Selenium Residues in Fish, 1971-1973 — National Pesticide Monitoring Program. Pestic. Monit. J. 11(1):5-34.

141. Watling, H., and R. Watling. 1976. Trace Metals in Oysters from Knysna Estuary. Mar. Pollut. Bull. 7(3):45-48.

142. Weiser, M., A. Lottermoser, H. Weingarten, and W. Krocza. 1975. Determination of Cadmium in Fish from Corinthian Lakes. Wien. Tieraerztl. Monatsschr. 62(6-8):214-217.

143. Wester, P. 1974. Trace Element Balances in Relation to Variations in Calcium Intake. Atherosclerosis 20:207-215.

144. White, D., and T. Kaiser. 1976. Residues of Organochlorine and Heavy Metals in Ruddy Ducks from the Delaware River, 1973. Pestic. Monit. J. 9(4):155-156.

145. World Health Organization. 1972. Evaluation of Certain Food Additives and the Contaminants Mercury, Lead, and Cadmium. Technical Report Series No. 505. Geneva. 32 pp.

146. Wright, D. 1976. Heavy Metals in Animals from the North East Coast. Mar. Pollut. Bull. 7(2):36-38.

147. Yamagata, N., and K. Iwashima. 1975. Average Cadmium Intake of the Japanese People. Bull. Inst. Public Health 24(11):18-23.

148. Yamagata, N., and I. Shigematsu. 1970. Cadmium Pollution in Perspective. Bull. Inst. Public Health (Tokyo) 19:1-27.

149. Yost, K. J. 1978. Purdue University. Personal communication to E. L. Dage, Office of Toxic Substances Environmental Protection Agency, Washington, D.C. August 22.

150. Zook, E., F. Greene, and E. Morris. 1970. Nutrient Composition of Selected Wheats and Wheat Products: VI. Distribution of Manganese, Copper, Nickel, Zinc, Magnesium, Lead, Tin, Cadmium, Chromium, and Selenium as Determined by Atomic Absorption Spectroscopy and Colorimetry. Cereal Chem. 47(6):720-738.

151. Zook, E., J. Powell, B. Hackley, J. Emerson, J. Brooker, and G. Knobl, Jr. 1976. National Marine Fisheries Service Preliminary Survey of Selected Seafoods for Mercury, Lead, Cadmium, Chromium, and Arsenic Content. J. Agric. Food Chem. 24(1):47-53.

APPENDIX

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
BEVERAGES	Cocoa, R	0.256		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Tea, green, R	0.200		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Coffee, instant, R	0.071		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Cocoa, R	0.060		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Tea, black, R	0.050		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Coffee, ground, R	0.013		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Total diet sample (12), O	0.01	0.01-0.04	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (12), C	0.0057	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Mahaffey et al., 1975
	Total diet sample (12), O	<0.01	0.01	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (12), C	<0.01	0.01	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (12), O	<0.01	0.01	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (12), O	<0.01	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Johnson and Manske, 1976

(NEXT PAGE)

BLANK PAGE

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
BEVERAGES	Total diet sample (12), O	<0.01	0.01-0.03	AAS or P, 0.01	6 U.S. cities, 1973-1974 (6)	Manske and Johnson, 1977
DAIRY PRODUCTS	Milk, Fall, R	0.43 ug/100 ml (wet wt.)	[ ]	AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972 (4)	"Normal" exposure farm. Dorn et al., 1973
	Milk, Winter, R	0.40 ug/100 ml (wet wt.)	[ ]	AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972 (4)	"Normal" exposure farm Dorn et al., 1973
	Milk, R	0.4 ug/100 ml (wet wt.)	[ ]	AAS, [ ]	Missouri, 1972 (7)	Winter samples from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975
	Milk, R	0.4 ug/100 ml (wet wt.)	[ ]	AAS, [ ]	Missouri, 1972 (4)	Fall samples from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975
	Milk, Summer, R	0.34 ug/100 ml (wet wt.)	[ ]	AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972 (5)	"Normal" exposure farm Dorn et al., 1973
	Milk, Spring, R	0.30 ug/100 ml (wet wt.)		AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972 (1)	"Normal" exposure farm Dorn et al., 1973
	Milk, R	0.3 ug/100 ml (wet wt.)	[ ]	AAS, [ ]	Missouri, 1972 (5)	Summer samples from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975
	Milk, R	0.3 ug/100 ml (wet wt.)		AAS, [ ]	Missouri, 1972 (1)	Spring sample from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Milk, O	0.042	[]	AAS, []	Cincinnati, Ohio, 1968 (4)	Evaporated and canned, Brand 1. Assayed as purchased. Murthy and Rhea, 1971
	Milk, O	0.040	[]	AAS, []	Cincinnati, Ohio, 1968 (4)	Canned, evaporated, Brand 4. Assayed as purchased. Murthy and Rhea, 1971
	Milk, O	0.039	[]	AAS, []	Cincinnati, Ohio, 1968 (4)	Soy flour added; Formula 3. Assayed as purchased. Murthy and Rhea, 1971
	Milk, O	0.038	[]	AAS, []	Cincinnati, Ohio, 1968 (4)	Canned, evaporated, Brand 3. Assayed as purchased. Murthy and Rhea, 1971
	Milk, O	0.035	[]	AAS, []	Cincinnati, Ohio, 1968 (4)	Canned, evaporated, Brand 2. Assayed as purchased. Murthy and Rhea, 1971
	Milk, pasteurized, Spring, R	0.027 (median)	0.018-0.037	AAS, []	59 U.S. cities, 1965 (59)	Pinkerton et al., 1972
	Milk, pasteurized, Spring, R	0.026 (median)	0.017-0.041	AAS, []	59 U.S. Cities, 1967 (59)	Pinkerton et al., 1972
	Milk, R	0.026	0.017-0.030	AAS, []	61 U.S. cities, 1965-1967 (305)	Murthy and Rhea, 1968
	Milk, R	0.026	0.020-0.037	AAS, []	Cincinnati, Ohio, [] (32)	Murthy and Rhea, 1968
	Milk, pasteurized, Fall, R	0.024 (median)	0.018-0.039	AAS, []	59 U.S. cities, 1965 (59)	Pinkerton et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Milk, O	0.021	[ ]	AAS, [ ]	Cincinnati, Ohio, 1968 (4)	Lamb meat added; Formula 4. Assayed as purchased. Murthy and Rhea, 1971
	Milk, O	0.021	[ ]	AAS, [ ]	Cincinnati, Ohio, 1968 (4)	Modified, Formula 2. Assayed as purchased. Murthy and Rhea, 1971
	Milk, O	0.020	[ ]	AAS, [ ]	Cincinnati, Ohio, 1968 (4)	Modified, Formula 1. Assayed as purchased. Murthy and Rhea, 1971
	Milk, human, R	0.019	[ ]	AAS, [ ]	Cincinnati, Ohio, 1968 (22)	Murthy and Rhea, 1971
	Milk, human, R	0.0111 (median)	0.0088-0.1335	AAS, [ ]	Cincinnati, Ohio, [ ] (23)	Pinkerton et al., 1973
	Total diet sample (1), O	0.01	0.01-0.03	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (1), O	0.01	0.01	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (1), O	0.01	0.01-0.14	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Prepared for eating Manske and Johnson, 1977
	Milk, O	0.006	[ ]	AAS, [ ]	California, [ ] (315)	Composite of nonfat, lowfat, regular, and extrarich Bruhn and Franke, 1974
	Milk, R	0.0054	[ ]	AAS, [ ]	California, [ ] ([ ])	Bruhn and Franke, 1975
	Total diet sample (1), O	0.005	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Milk, Winter, R	0.0044	0.0031-0.0054	AAS, [ ]	Beltsville, Maryland, 1973 (4)	"Normal" exposure area Lagerwerff and Brower, 1974

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Milk, Spring, R	0.0030	0.0018-0.0038	AAS, [ ]	Galena, Kansas, 1972 (5)	Low exposure area; >3 km downwind from lead smelter. Lagerwerff and Brower, 1974
	Milk, whole, O	0.0029 (dry basis)	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Freeze-dried Cornell and Pallansch, 1973
	Milk, skim, O	0.0024 (dry basis)	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Dried, foam-spray Cornell and Pallansch, 1973
	Milk, whole, O	0.0023 (dry basis)	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Freeze-dried Cornell and Pallansch, 1973
	Milk, whole, O	0.0019 (dry basis)	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Freeze-dried Cornell and Pallansch, 1973
	Milk, whole, O	0.0017 (dry basis)	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Freeze-dried Cornell and Pallansch, 1973
	Milk, whole, O	0.0016 (dry basis)	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Freeze-dried Cornell and Pallansch, 1973
	Milk, whole, O	0.0016	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Freeze-dried Cornell and Pallansch, 1973
	Milk, whole, O	0.0007 (dry basis)	[ ]	P, 0.0005	USA, [ ] (2 or 3)	Freeze-dried Cornell and Pallansch, 1973
	Total diet sample (1), C	<0.01	0.01	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (1), C	<0.01	0.01	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Total diet sample (1), O	<0.01	[ ]	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (1), O	<0.01	0.01	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (1), O	<0.01	0.01	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (1), C	<0.01	0.01	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (1), O	<0.01	0.01	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (1), O	<0.01	0.01	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (1), C	<0.01	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
FRUITS	Rhubarb, F	0.57 (dry basis)	[ ]	AAS, [ ]	Beltsville, Maryland, [ ] (4)	"Normal" exposure area Lagerwerff and Brower, 1974
	Total diet sample (9), C	0.042	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Total diet sample (9), O	0.02	0.01-0.07	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (9), O	0.01	0.01-0.06	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Apple, R	0.005		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Total diet sample (9), R	<0.01	0.01	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
FRUITS	Total diet sample (9), C	<0.01	0.01	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (9), C	<0.01	0.01-0.02	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
	Total diet sample (9), O	<0.01	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Prepared for eating Manske and Johnson, 1977
GARDEN FRUITS	Tomato, F	0.22 (dry basis)	[ ]	AAS, [ ]	Beltsville, Maryland, [ ] (4)	"Normal" exposure area Lagerwerff and Brower, 1974
	Total diet sample (8), O	0.03	0.02-0.06	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (8), C	0.03	0.01-0.10	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Tomato, O	0.024		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Total diet sample (8), C	0.02	0.01-0.08	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (8), C	0.02	0.01-0.06	AAS, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (8), C	0.02	0.01-0.05	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (8), C	0.02	0.01-0.02	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (8), C	0.02	0.01-0.05	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GARDEN FRUITS	Total diet sample (8), C	0.02	0.01-0.02	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (8), O	0.02	0.01-0.03	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (8), C	0.02	0.01-0.07	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (8), O	0.02	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
	Total diet sample (8), O	0.02	0.01-0.10	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Prepared for eating Manske and Johnson, 1977
	Total diet sample (8), O	0.019	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Tomato, O	0.017		Sp., 0.05 ug	USA, [ ] (1)	Juice Schroeder and Balassa, 1961
	Total diet sample (8), C	0.01	0.01-0.04	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (8), O	0.01	0.01-0.02	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (8), C	0.01	0.01-0.02	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (8), R	0.01	0.01-0.02	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (8), O	0.01	0.01	AAS, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GARDEN FRUITS	Tomato, R	0.00		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
GRAIN AND CEREAL	Corn (ZEA MAYS L.), grain, R	0.8 (dry basis)	[ ]	AAS, [ ]	Dayton, Ohio, 1973 (2)	No known contamination Kirkham, 1975
	Wheat (TRITICUM sp.), R	0.34 (dry basis)		AAS, [ ]	Illinois, 1969-1970 (1)	Normal exposure Huffman and Hodgson, 1973
	Wheat (TRITICUM sp.), R	0.32 (dry basis)	[ ]	AAS, [ ]	Nebraska, 1969-1970 (5)	Normal exposure Huffman and Hodgson, 1973
	Wheat, O	0.304	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Wheat germ, 11% fat content Garcia et al., 1974b
	Corn, O	0.254 (dry basis)	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Defatted, dry-milled flour Garcia et al., 1974b
	Wheat (TRITICUM sp.), R	0.25 (dry basis)	[ ]	AAS, [ ]	Virginia, 1969-1970 (1)	Normal exposure Huffman and Hodgson, 1973
	Wheat, O	0.22 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (5)	Bread, sponge-dough Zook et al., 1970
	Wheat, O	0.22 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (28)	Wheat flakes, breakfast product. Zook et al., 1970
	Wheat (TRITICUM sp.), R	0.22 (dry basis)	[ ]	AAS, [ ]	North Carolina, 1969-1970 (4)	Normal exposure Huffman and Hodgson, 1973
	Wheat (TRITICUM sp.), R	0.20	0.12-0.34	AAS, [ ]	10 U.S. states, 1969-1970 (33)	Normal exposure. Huffman and Hodgson, 1973
	Wheat, C	0.19 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (29)	Bread, white, continuous mix Zook et al., 1970

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Wheat (TRITICUM sp.), R	0.19 (dry basis)	[ ]	AAS, [ ]	Colorado, 1969-1970 (9)	Normal exposure Huffman and Hodgson, 1973
	Wheat (TRITICUM sp.), R	0.18 (dry basis)		AAS, [ ]	Georgia, 1969-1970 (1)	Normal exposure. Huffman and Hodgson, 1973
	Oats, O	0.163		Sp., 0.05 ug	USA, [ ] (1)	Oatmeal Schroeder and Balassa, 1961
	Wheat, O	0.16 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (5)	Bread, continuous-mix Zook et al., 1970
	Wheat, C	0.16 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (38)	Bread, whole wheat Zook et al., 1970
	Wheat, O	0.16 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (52)	Bread, white, conventional dough Zook et al., 1970
	Wheat, O	0.16 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (23)	Biscuit mix Zook et al., 1970
	Wheat (TRITICUM sp.), R	0.16 (dry basis)	[ ]	AAS, [ ]	Kansas, 1969-1970 (7)	Normal exposure Huffman and Hodgson, 1973
	Wheat, O	0.150		Sp., 0.05 ug	USA, [ ] (1)	Wheatena Schroeder and Balassa, 1961
	Wheat, C	0.15 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (2)	Flour, cracker Zook et al., 1970
	Corn, whole kernel, yellow, R	0.148 (dry basis)	[ ]	AAS, <0.0027	Kansas and Missouri, [ ] (6)	Garcia et al., 1974a
	Wheat, C	0.14 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (5)	Flour, cracker Zook et al., 1970
	Wheat (TRITICUM sp.), R	0.14 (dry basis)	[ ]	AAS, [ ]	Texas, 1969-1970 (2)	Normal exposure Huffman and Hodgson, 1973

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Wheat, O	0.130		Sp., 0.05 ug	Vermont, [ ] (1)	Stone ground Schroeder and Balassa, 1961
	Wheat, Durum, R	0.13 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (2)	Zook et al., 1970
	Wheat, O	0.129		Sp., 0.05 ug	Vermont, [ ] (1)	Crushed Schroeder and Balassa, 1961
	Oats, O	0.127		Sp., 0.05 ug	USA, [ ] (1)	Precooked Schroeder and Balassa, 1961
	Corn, O	0.121	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Cheese-flavored snack food Garcia et al., 1974b
	Wheat, O	0.12 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (52)	Rolls, hamburger Zook et al., 1970
	Wheat (TRITICUM sp.), R	0.12 (dry basis)	[ ]	AAS, [ ]	Oklahoma, 1969-1970 (2)	Normal exposure Huffman and Hodgson, 1973
	Wheat (TRITICUM sp.), R	0.12 (dry basis)		AAS, [ ]	Kentucky, 1969-1970 (1)	Normal exposure. Huffman and Hodgson, 1973
	Wheat, O	0.11 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (2)	Macaroni Zook et al., 1970
	Wheat, common, hard, R	0.10(dry basis)	[ ]	AAS, 0.015	USA, [ ] (5)	Zook et al, 1970
	Wheat, O	0.10 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (6)	Flour, cake Zook et al., 1970
	Wheat, O	0.10 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (2)	Semolina Zook et al., 1970
	Wheat, O	0.10 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (47)	Shredded-wheat breakfast product Zook et al., 1970

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Wheat, O	0.10 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (28)	Doughnuts, cake Zook et al., 1970
	Flour, No. 1, R	0.088		Sp., 0.05 ug	Minneapolis, [ ] (1)	Schroeder and Balassa, 1961
	Oats, whole, R	0.081		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Wheat, C	0.08 (dry basis)	[ ]	AAS, 0.015	10 U.S. cities, [ ] (24)	Cereal-to-be-cooked Zook et al., 1970
	Flour, No. 1, R	0.075		Sp., 0.05 ug	Minneapolis, [ ] (1)	Schroeder and Balassa, 1961
	Corn, fresh, F	0.075		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Buckwheat, seed, R	0.072		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Corn, O	0.072	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Corn chips (Snack food, brand A) Garcia et al., 1974b
	Corn, O	0.070	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Breakfast flakes Garcia et al., 1974b
	Wheat, O	0.07 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (2)	Flour, cut-off (cracker) Zook et al., 1970
	Wheat, common, soft, R	0.07 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (4)	Zook et al., 1970
	Corn, whole kernel, yellow, R	0.065 (dry basis)	[ ]	AAS, <0.0027	Iowa, [ ] (6)	Garcia et al., 1974a

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Corn, O	0.065		Sp., 0.05 ug	New Hampshire, [ ] (1)	Meal, special Schroeder and Balassa, 1961
	Corn, whole kernel, white, R	0.061 (dry basis)	[ ]	AAS, <0.0027	Texas, [ ] (6)	Garcia et al., 1974a
	Corn, yellow, O	0.060	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Briquettes, processed breakfast food Garcia et al., 1974b
	Flour, No. 2, R	0.059		Sp., 0.05 ug	Minneapolis, [ ] (1)	Schroeder and Balassa, 1961
	Wheat, Winter, R	0.057		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Corn, dent, whole kernel, R	0.055 (dry basis)	0.035-0.148 (dry basis)	AAS, <0.0027	Representative U.S. corn states, [ ] (11)	Garcia et al., 1974b
	Wheat, O	0.05 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (5)	Flour, Baker's patent Zook et al., 1970
	Wheat, O	0.05 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (5)	Flour, straight grade Zook et al., 1970
	Wheat, O	0.05 (dry basis)	[ ]	AAS, 0.015	USA, [ ] (6)	Flour, soft patent (cake) Zook et al., 1970
	Corn, O	0.049	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Corn chips (Snack food, brand B) Garcia et al., 1974b
	Popcorn, whole kernel, unpopped, R	0.048	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Garcia et al., 1974b
	Corn, whole kernel, white, R	0.042 (dry basis)	[ ]	AAS, <0.0027	Illinois, [ ] (6)	Garcia et al., 1974a

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Corn, yellow, O	0.042 (dry basis)	[]	AAS, 0.0027	Illinois, [] (4)	Meal Garcia et al., 1974 b
	Total diet sample (3), O	0.04	0.02-0.05	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (3), O	0.04	0.01-0.06	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Corn, whole kernel, yellow, R	0.039 (dry basis)	[]	AAS, <0.0027	Illinois, [] (6)	Garcia et al., 1974a
	Rice, O	0.038		Sp., 0.05 ug	USA, [] (1)	Precooked Schroeder and Balassa, 1961
	Corn, whole kernel, white, R	0.035 (dry basis)	[]	AAS, <0.0027	Indiana, [] (6)	Garcia et al., 1974a
	Corn, white, sweet, C	0.031	[]	AAS, <0.0027	Illinois, [] (4)	Brand C Garcia et al., 1974b
	Wheat, O	0.03 (dry basis)	[]	AAS, 0.015	10 U.S. cities, [] (31)	Flour, all-purpose Zook et al., 1970
	Total diet sample (3), C	0.03	0.01-0.05	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (3), C	0.03	0.02-0.03	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (3), O	0.03	0.02-0.03	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (3), O	0.03	0.01-0.07	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (3), O	0.03	0.02-0.05	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Total diet sample (3), O	0.03	0.02-0.03	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (3), O	0.03	0.02-0.05	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
	Total diet sample (3), O	0.03	0.02-0.05	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Prepared for eating Manske and Johnson, 1977
	Total diet sample (3), O	0.028	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Oats, seed, R	0.024		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Corn, white, O	0.022 (dry basis)	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Meal Garcia et al., 1974b
	Total diet sample (3), O	0.02	0.01-0.02	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (3), O	0.02	0.01-0.04	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (3), O	0.02	0.01-0.04	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (3), O	0.02	0.02-0.03	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (3), O	0.02	0.01-0.02	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (3), O	0.02	0.02-0.06	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (3), O	0.02	0.01-0.03	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Wheat, O	0.015		Sp., 0.05 ug	USA, [ ] (1)	Wheaties Schroeder and Balassa, 1961
	Corn, yellow, sweet, C	0.014	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Brand B Garcia et al., 1974b
	Corn, white, O	0.013 (dry basis)	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Grits Garcia et al., 1974b
	Wheat, O	0.012		Sp., 0.05 ug	USA, [ ] (1)	Bread, stone ground Schroeder and Balassa, 1961
	Corn, yellow, whole kernel, F	0.005	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Brand A Garcia et al., 1974b
	Corn, O	0.00		Sp., 0.05 ug	USA, [ ] (1)	Dried, old Schroeder and Balassa, 1961
	Corn, R	0.00		Sp., 0.05 ug	USA, [ ] (1)	On cob Schroeder and Balassa, 1961
	Rye, whole, R	0.00		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
LEAFY VEGETABLES	Lettuce, leaf, R	1.2 (dry basis)	0.60-1.85 (dry basis)	AAS, [ ]	Howard, Boone and Audrain Counties, Missouri, [ ] (11)	Samples washed with distilled water. Normal exposure area. Hemphill et al., 1973
	Lettuce, F	0.84 (dry basis)	[ ]	AAS, [ ]	Beltsville, Maryland, [ ] (4)	"Normal" exposure area Lagerwerff and Brower, 1974
	Total diet sample (5), O	0.08	0.01-0.4	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (5), C	0.08	0.02-0.20	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Total diet sample (5), O	0.07	0.03-0.14	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (5), C	0.06	0.02-0.14	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (5), C	0.06	0.03-0.11	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (5), C	0.06	0.02-0.14	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (5), C	0.051	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Total diet sample (5), O	0.05	0.02-0.08	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (5), O	0.05	0.03-0.08	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (5), C	0.05	0.02-0.09	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (5), C	0.05	0.03-0.10	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (5), O	0.05	0.01-0.28	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
	Lettuce, iceberg, R	0.040*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Total diet sample (5), C	0.04	0.01-0.14	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Prepared for eating Manske and Johnson, 1977
	Kale, R	0.038		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Chicory, R	0.038		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Total diet sample (5), O	0.03	0.02-0.05	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (5), O	0.03	0.02-0.06	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (5), C	0.03	0.01-0.05	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Kohlrabi, leaves, R	0.024		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Total diet sample (5), O	0.02	0.02-0.03	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (5), C	0.02	0.01-0.04	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Lettuce, garden, R	0.017		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Escarole, R	0.016		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Lettuce, iceberg, R	0.010		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Cabbage, white, R	0.008		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Cabbage, red, R	0.007		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Spinach, R	0.006		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Lettuce, early curled, R	0.005*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
LEGUME VEGETABLES	Pea, F	0.42 (dry basis)	[ ]	AAS, [ ]	Beltsville, Maryland, [ ] (4)	"Normal" exposure area Lagerwerff and Brower, 1974
	Bean, F	0.24	[ ]	AAS, [ ]	Beltsville, Maryland, [ ] (4)	"Normal" exposure area Lagerwerff and Brower, 1974
	Peanut, O	0.130		Sp., 0.05 ug	USA, [ ] (1)	Roasted, fresh Schroeder and Balassa, 1961
	Bean, kidney, red, C	0.052		Sp., 0.05 ug	USA, [ ] (1)	Dried Schroeder and Balassa, 1961
	Pea, green, O	0.040		Sp., 0.05 ug	USA, [ ] (1)	Dried, split Schroeder and Balassa, 1961
	Bean, navy, O	0.015		Sp., 0.05 ug	USA, [ ] (1)	Dried Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEGUME VEGETABLES	Bean, yellow eye, C	0.012		Sp., 0.05 ug	USA, [ ] (1)	Dried Schroeder and Balassa, 1961
	Total diet sample (6), O	0.01	0.02-0.05	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (6), C	0.01	0.02-0.03	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (6), C	0.01	0.01-0.02	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (6), O	0.01	0.01-0.04	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (6), O	0.01	0.01-0.03	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (6), O	0.01	0.01-0.10	AAS or P, 0.01	8 U.S. cities, 1973-1974 (8)	Prepared for eating Manske and Johnson, 1977
	Total diet sample (6), O	0.007	0.01-0.02	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (6), C	0.007	0.02	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (6), O	0.007	0.01-0.02	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (6), C	0.006	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEGUME VEGETABLES	Bean, string, R	0.003*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Total diet sample (6), O	0.003	0.01	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (6), O	0.003	0.01	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Pea, green, R	0.001*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Bean, lima, R	0.00		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Pea, P	0.00		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Bean, green, P	<0.5 (dry basis)	[ ]	AAS, [ ]	Howard, Boone and Audrain Counties, Missouri., [ ] (11)	Samples washed with distilled water. Normal exposure area. Hemphill et al., 1973
	Total diet sample (6), O	<0.01	[ ]	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEGUME VEGETABLES	Total diet sample (6), C	<0.01	0.01-0.02	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (6), O	<0.01	0.01	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (6), O	<0.01	0.02	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (6), O	<0.01	0.01-0.03	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
MEAT, FISH, POULTRY	Scallop, rock (HINNITES MULTIRUGOSUS), R	31.2	1.8-46.8	AAS, [ ]	California coast, 1973 (11)	Vattuone et al., 1976
	Squirrel, red, female, kidney, R	17.35		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, kidney, R	11.7		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Squirrel, red, male, kidney, R	7.97		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, kidney, R	6.58		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Squirrel, rock, liver, R	6.1 (dry basis)	0.1-55.8 (dry basis)	AAS, [ ]	Utah, 1974-1976 (108)	Cd content of soil, 0.8-11.5 ppm (dry basis) Sharma and Shupe, 1977
	Deer, kidney, R	4.12		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Deer, kidney, right, R	4.02		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, kidney, R	3.70		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Squirrel, grey, male, kidney, R	3.62		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, kidney, left, R	3.60		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Rabbit, wild, male, kidney, R	3.58		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Oyster, eastern, R	3.10	0.10-7.80	AAS, [ ]	Atlantic coastal waters, [ ] ([ ])	Ronk, 1971
	Deer, kidney, R	2.38		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, kidney, R	2.37		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Scallop, calico (AEQUIPECTEN GIBBUS), R	2.34	1.57-3.19	AAS, [ ]	Atlantic Ocean, Cape Canaveral, Fla., 1971-1972 (10)	Only abductor muscle analyzed Zook et al., 1976
	Deer, kidney, R	2.10		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Oyster (CRASSOSTREA VIRGINICA), R	2.06	1.60-2.37	AAS, [ ]	Long Island Sound, 1971 (10)	Zook et al., 1976

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Squirrel, red, male, liver, R	2.03		Sp., 0.05 ug	USA, [] (1)	Schroeder and Balassa, 1961
	Mussel (MYTILUS CALIFORNIANUS), R	1.88	1.43-2.63	AAS, []	California coast, 1973 (9)	Vattuone et al., 1976
	Oyster, C	1.598		Sp., 0.05 ug	USA, [] (1)	Schroeder and Balassa, 1961
	Beef, kidney, R	1.00		Sp., 0.05 ug	USA, [] (1)	Schroeder and Balassa, 1961
	Squirrel, red, female, liver, R	0.80		Sp., 0.05 ug	USA, [] (1)	Schroeder and Balassa, 1961
	Deer, liver, P	0.74		Sp., 0.05 ug	USA, [] (1)	Schroeder and Balassa, 1961
	Oyster, R	0.715	[]	Sp., 0.05 ug	Cape Cod, USA, [] (6)	Schroeder and Balassa, 1961
	Oyster (CRASSOSTREA VIRGINICA), R	0.621	0.375-1.29	AAS, []	Chesapeake Bay, 1971 (10)	Zook et al., 1976
	Oyster (CRASSOSTREA VIRGINICA), R	0.62	0.05-1.61	NT, 0.05	Mobile Bay, 1968-1969 (108)	Kopfler and Mayer, 1973
	Duck, ruddy, liver (OXYURA JAMAICENSIS), R	0.61	0.27-1.60	AAS, 0.01	New Jersey, 1973 (8)	White and Kaiser, 1976
	Oyster, R	0.605		Sp., 0.05 ug	Cape Cod, USA, [] (1)	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	.COMMENTS REFERENCES
MEAT, FISH, POULTRY	Pork, kidney, R	0.60		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, liver, R	0.56		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, liver, R	0.44		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Deer, liver, R	0.35		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Beef, kidney, R	0.31		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Rabbit, wild, male, liver, R	0.30		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Pork, kidney, R	0.29		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Clam, softshell, R	0.27	0.10-0.90	AAS, [ ]	Atlantic coastal waters, [ ] ([ ])	Ronk, 1971
	Pork, kidney, R	0.25		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Lingcod, fillets, R	0.224	[ ]	AAS, [ ]	Oregon, northern coast, [ ] (10)	Childs and Gaffke, 1974
	Beef, kidney, R	0.22		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Beef, liver, R	0.200		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Beef, liver, R	0.2		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Oyster, Quahaug, northern, R	0.19	0.10-0.73	AAS, [ ]	Atlantic coastal waters, [ ] ([ ])	Fonk, 1971
	Salmon, young, liver, R	0.19		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Clam, hard, R	0.188		Sp., 0.05 ug	New England, USA, [ ] (1)	Schroeder and Balassa, 1961
	Clam, soft (MYA ARENARIA), R	0.184	0.059-0.293	AAS, [ ]	Chesapeake Bay, 1971 (10)	Zook et al., 1976
	Pork, kidney, R	0.17		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Beef, liver, R	0.16		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Salmon, old, liver, R	0.15		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Pork, kidney, R	0.15		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Mussel, R	0.147		Sp., 0.05 ug	New England, USA, [ ] (1)	Schroeder and Balassa, 1961
	Lamb, kidney, R	0.14		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Scallop, smooth (PLACOPECTEN MAGELLANICUS), R	0.136	0.040-0.234	AAS, [ ]	Atlantic Ocean, South Channel, 1971 (10)	Only abductor muscle analyzed Zook et al., 1976
	Lobster, spiny (PANULIRUS BOREALIS), O	0.133	0.059-0.233	AAS, [ ]	Atlantic Ocean, Florida, [ ] (10)	Cooked split tails Zook et al., 1976
	Lobster, tail, R	0.132		Sp., 0.05 ug	Maine, [ ] (1)	Schroeder and Balassa, 1961
	Crab, king, body meat (PARALITHODES CAMSCHATICA), O	0.121	0.020-0.189	AAS, [ ]	Cook's Inlet, Alaska, 1970-1971 (10)	Cooked commercially Zook et al., 1976
	Perch (BAIRDIELLA CHRYSURA), R	0.12 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (5)	Muscle tissue analyzed. Stickney et al., 1975
	Lobster, claw, R	0.101		Sp., 0.05 ug	Maine, [ ] (1)	Schroeder and Balassa, 1961
	Crab, blue (CALLINECTES SAPIDUS), O	0.101	0.020-0.158	AAS, [ ]	Chesapeake Bay, 1971 (10)	Cooked commercially Zook et al., 1976
	Shrimp, O	0.100		Sp., 0.05 ug	USA, [ ] (1)	Fresh, cooked Schroeder and Balassa, 1961
	Pork, liver, R	0.100		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Pork, liver, R	0.1		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Sturgeon, Atlantic (ACIPENSER sp.), R	0.092	[ ]	AAS, 0.010	Hudson River, N.Y., 1969 (4)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Rockfish, orange, fillets, R	0.088	[ ]	AAS, [ ]	Oregon, northern coast, [ ] (14)	Childs and Gaffke, 1974
	Trout, lake (SALVELINUS NAMAYCUSH), R	0.080	[ ]	AAS, 0.010	Fourth Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Fish, mixed species, R	0.08	0.04-0.17	MS, [ ]	New York, 1969-1970 (48)	Data for individual fish given by authors. Tong et al., 1972
	Fish, mixed species, whole, R	0.08	0.05-1.80	AAS, 0.05	98 U.S. stations, 1972 (391)	Average computed assuming Cd to be zero in "undetected" samples. Walsh et al., 1977
	Shrimp, white (PENAEUS SETIFERUS), O	0.079	0.056-0.112	AAS, [ ]	Gulf of Mexico, 1971 (10)	Raw peeled tails Zook et al., 1976
	Catfish, channel, cultured (ICTALURUS PUNCTATUS), R	0.079	0.020-0.152	AAS, [ ]	Mississippi and Arkansas, 1971 (5)	Zook et al., 1976
	Drum, freshwater, R	0.077	[ ]	NT, [ ]	Lake Erie, western basin, 1970 (25)	Pillay et al., 1973
	Crab, king, leg meat (PARALITHODES CAMSCHATICA), O	0.072	0.000-0.158	AAS, [ ]	Cook's Inlet, Alaska, 1970-1971 (10)	Cooked commercially Zook et al., 1976
	Shrimp (PENAEUS AZTECUS), R	0.07 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (14)	Edible muscle tissue analyzed. Stickney et al., 1975
	Crab (CALLINECTES SAPIDUS), R	0.07 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (23)	Claw meat analyzed. Stickney et al., 1975
	Shrimp, Alaskan, mixed species, O	0.069	0.018-0.114	AAS, [ ]	Pacific Ocean, S of Marmot Island, Alaska, 1971 (10)	Cooked, peeled and deveined tails Zook et al., 1976

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Shrimp, pink (PANDALUS BOREALIS), O	0.069	0.000-0.200	AAS, [ ]	Atlantic Ocean, Middle Bank, [ ] (10)	Raw peeled tails Zook et al., 1976
	Perch, ocean (SEBASTES MARINUS), R	0.069	0.000-0.200	AAS, [ ]	Atlantic Ocean, Gulf of Maine, 1971 (10)	Zook et al., 1976
	Salmon, sockeye (ONCORHYNCHUS NERKA), C	0.067	0.038-0.159	AAS, [ ]	Pacific, Naknek River, 1971 (10)	Zook et al., 1976
	Pike, walleye (STIZOSTEDION V. VITREUM), R	0.064		AAS, 0.010	Susquehanna River, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Tuna, C	0.062		Sp., 0.05 ug	Oregon, [ ] (1)	Schroeder and Balassa, 1961
	Clam, surf (SPISULA SOLIDISSIMA), R	0.061	0.000-0.098	AAS, [ ]	Maryland, 1971 (10)	Zook et al., 1976
	Bass, white, R	0.060	[ ]	NT, [ ]	Lake Erie, western basin, 1970 (25)	Pillay et al., 1973
	Perch, yellow, R	0.057	[ ]	NT, [ ]	Lake Erie, western basin, 1970 (25)	Pillay et al., 1973
	Catfish, channel, R	0.057	[ ]	NT, [ ]	Lake Erie, western basin, 1970 (25)	Pillay et al., 1973
	Snapper, red (LUTJANUS CAMPECHANUS), R	0.057	0.000-0.119	AAS, [ ]	Gulf of Mexico, 1971 (11)	Zook et al., 1976
	Walleye, R	0.053	[ ]	NT, [ ]	Lake Erie, western basin, 1970 (25)	Pillay et al., 1973
	Perch, yellow (PERCA sp.), R	0.051	[ ]	AAS, 0.010	Susquehanna River, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Weakfish (CYNOSCION REGALIS), R	0.05 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (7)	Muscle tissue analyzed. Stickney et al., 1975
	Shrimp, white (PENAEUS SETIFERUS), R	0.049	0.000-0.076	AAS, [ ]	Atlantic, Cape Canaveral, 1971 (10)	Zook et al., 1976
	Pollock (POLLACHIUS VIRENS), R	0.048	0.000-0.110	AAS, [ ]	Atlantic Ocean, Middle Bank, 1971 (10)	Zook et al., 1976
	Cod, Atlantic (GADUS MORHUA), R	0.048	0.000-0.155	AAS, [ ]	Atlantic Ocean, Middle Bank, 1971 (10)	Zook et al., 1976
	Hake, silver (MERLUCCIUS BILINEARIS), R	0.047	0.000-0.200	AAS, [ ]	Atlantic Ocean, Ipwich Bay, 1971 (10)	Zook et al., 1976
	Halibut, Pacific (HIPPOGLOSSUS STENOLEPIS), R	0.046	0.009-0.080	AAS, [ ]	Pacific Ocean, Gulf of Alaska, 1970 (10)	Zook et al, 1976
	Haddock (MELANOGRAMMUS AEGLEFINUS), R	0.046	0.000-0.083	AAS, [ ]	Atlantic Ocean, Middle Bank, 1971 (10)	Zook et al., 1976
	Catfish, channel, wild (ICTALURUS PUNCTATUS), R	0.046	0.000-0.091	AAS, [ ]	Louisiana, [ ] (5)	Zook et al., 1976
	Pike, northern (ESOX LUCIUS), R	0.045	[ ]	AAS, 0.010	Butterfield Lake, N.Y., 1969 (4)	Decapitated, eviscerated Lovett et al., 1972
	Shrimp, brown (PENAEUS AZTECUS), O	0.045	0.000-0.119	AAS, [ ]	Gulf of Mexico, 1971 (10)	Raw peeled tails Zook et al., 1976
	Perch, yellow, R	0.040	0.019-0.073	AAS, [ ]	Wintergreen Lake, Michigan, [ ] (13)	Mathis and Kevern, 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Spot (LEIOSTOMUS XANTHURUS), R	0.04 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (34)	Muscle tissue analyzed. Stickney et al., 1975
	Croaker (MICROPOGON UNDULATUS), R	0.04 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (27)	Muscle tissue analyzed. Stickney et al., 1975
	Drum (STELLIFER LANCEICIATUS), R	0.04 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (32)	Muscle tissue analyzed. Stickney et al., 1975
	Shrimp (PENAEUS SETIFERUS), R	0.04 (dry basis)	[ ]	AAS, [ ]	Georgia estuary, [ ] (82)	Edible muscle tissue analyzed. Stickney et al., 1975
	Veal, kidney, R	0.04		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Salmon, Coho, R	0.039	[ ]	NT, [ ]	Lake Erie, western basin, 1970 (25)	Pillay et al., 1973
	Swordfish, R	0.037		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Bass, largemouth, R	0.036	0.020-0.048	AAS, [ ]	Wintergreen Lake, Michigan, [ ] (11)	Mathis and Kevern, 1975
	Scallop, Atlantic (AEQUIPECTEN IRRADIANS), R	0.035	0.000-0.100	AAS, [ ]	Nantucket Island, 1970 (10)	Only abductor muscle analyzed Zook et al., 1976
	Bullhead, yellow, R	0.034	0.021-0.049	AAS, [ ]	Wintergreen Lake, Michigan, [ ] (6)	Mathis and Kevern, 1975
	Rockfish, mixed species, R	0.031	0.000-0.074	AAS, [ ]	Pacific Ocean, coast of California, 1971 (10)	Zook et al., 1976

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Trout, lake (SALVELINUS NAMAYCUSH), R	0.030	[ ]	AAS, 0.010	West Canada Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Fish, mixed species, whole, R	0.03	0.05-0.21	AAS, 0.05	17 USA stations, 1973 (66)	Average computed assuming Cd to be zero in "undetected" sample. Walsh et al., 1977
	Drum, freshwater (APLODINOTUS GRUNNIENS), R	0.029	[ ]	AAS, 0.010	Lake Erie, eastern end, 1969 (19)	Decapitated, eviscerated Lovett et al., 1972
	Bass, silver, R	0.028	[ ]	AAS, 0.010	Lake Erie, eastern end, 1969 (8)	Decapitated, eviscerated Lovett et al., 1972
	Flounder, yellowtail (LIMANDA FERRUGINEA), R	0.028	0.000-0.059	AAS, [ ]	Atlantic Ocean, South Georges Bank, 1971 (10)	Zook et al., 1976
	Bullhead (ICTALURUS sp.), R	0.027	[ ]	AAS, 0.010	Blue Mountain Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Sole, Rex, fillets, R	0.026	[ ]	AAS, [ ]	Oregon, northern coast, [ ] (20)	Childs and Gaffke, 1974
	Sturgeon (ACIPENSER sp.), R	0.026	[ ]	AAS, 0.010	St. Lawrence River, N.Y., 1969 (11)	Decapitated, eviscerated Lovett et al., 1972
	Pork, chops, R	0.025		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.025	[ ]	AAS, 0.010	St. Lawrence River, N.Y., 1969 (6)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Beef, chuck, R	0.024		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Salmon, Coho (ONCORHYNCHUS KISUTCH), R	0.024	[ ]	AAS, 0.010	Cattaraugus Creek, N.Y., 1969 (9)	Decapitated, eviscerated Lovett et al., 1972
	Trout, rainbow (SALMO GAIRDNERI), R	0.024	[ ]	AAS, 0.010	Blue Mountain Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Catfish, channel (ICTALURUS sp.), R	0.023	[ ]	AAS, 0.010	Lake Champlain, N.Y., 1969 (6)	Decapitated, eviscerated Lovett et al., 1972
	Bullhead, brown (ICTALURUS sp.), R	0.023		AAS, 0.010	St. Lawrence River, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.022	[ ]	AAS, 0.010	Butterfield Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.022		AAS, 0.010	Blue Mountain Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Trout, brown (SALMON TRUTTA), R	0.021	[ ]	AAS, 0.010	Chittenango Creek, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.021		AAS, 0.010	Caroga Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Bass, largemouth (MICROPTERUS SALMOIDES), R	0.020	[ ]	AAS, 0.010	Butterfield Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Hake, Pacific (MERLUCCIUS PRODUCTUS), R	0.020	0.000-0.059	AAS, [ ]	Pacific Ocean, Gray's Harbor, 1971 (10)	Zook et al., 1976

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Total diet sample (2), O	0.02	0.01-0.07	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (2), O	0.02	0.01-0.03	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Fish, mixed species, whole, P	0.02	0.05-0.54	AAS, 0.05	100 USA stations, 1971 (584)	Average computed assuming Cd to be zero in "undetected" samples. Walsh et al., 1977
	Total diet sample (2), O	0.02	0.01-0.06	AAS or P, 0.01	21 U.S. cities, 1973-1974 (21)	Prepared for eating Manske and Johnson, 1977
	Bullhead (ICTALURUS sp.), R	0.019	[]	AAS, 0.010	Butterfield Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Salmon, Coho (ONCORHYNCHUS KISUTCH), R	0.019	[]	AAS, 0.010	Lake Erie, eastern end, 1969 (6)	Decapitated, eviscerated Lovett et al., 1972
	Trout, rainbow (SALMO GAIRDNERI), R	0.019		AAS, 0.010	8th Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.019		AAS, 0.010	Canandaigua Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Pike, northern (ESOX LUCIUS), R	0.018	[]	AAS, 0.010	Indian Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Bullhead (ICTALURUS sp.), R	0.018		AAS, 0.010	Canadice Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Pickerel, chain (ESOX NIGER), R	0.018	[]	AAS, 0.010	Hemlock Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Salmon, C	0.017		Sp., 0.05 ug	Alaska, [ ] (1)	Schroeder and Balassa, 1961
	Trout, rainbow (SALMO GAIRDNERI), R	0.017	[ ]	AAS, 0.010	Utowana Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Pike, walleye (STIZOSTEDION V. VITREUM), R	0.016	[ ]	AAS, 0.010	Lake Erie, eastern end, 1969 (8)	Decapitated, eviscerated Lovett et al., 1972
	Perch, yellow (PERCA sp.), R	0.016	[ ]	AAS, 0.010	Lake Erie, eastern end, 1969 (10)	Decapitated, eviscerated Lovett et al., 1972
	Salmon, Coho (ONCORHYNCHUS KISUTCH), R	0.016	[ ]	AAS, 0.010	Spring Brook, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Trout, rainbow (SALMO GAIRDNERI), R	0.016	[ ]	AAS, 0.010	Skaneateles Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Trout, rainbow (SALMO GAIRDNERI), R	0.016	[ ]	AAS, 0.010	Canadice Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.016	[ ]	AAS, 0.010	Lake Erie, eastern end, 1969 (10)	Decapitated, eviscerated Lovett et al., 1972
	Bass, largemouth (MICROPTERUS SALMOIDES), R	0.016	[ ]	AAS, 0.010	Lake George, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Lamb, chops, R	0.015		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Pike, walleye (STIZOSTEDION V. VITREUM), R	0.015	[ ]	AAS, 0.010	St. Lawrence River, N.Y., 1969 (4)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Crappie, black (POMOXIS NIGROMACULATUS), R	0.015	[]	AAS, 0.010	Lake George, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Trout, rainbow (SALMO GAIRDNERI), R	0.015	[]	AAS, 0.010	Lake George, N.Y., 1969 (4)	Decapitated, eviscerated Lovett et al., 1972
	Sole, Dover, fillets, R	0.014	[]	AAS, []	Oregon, southern coast, [] (12)	Childs and Gaffke, 1974
	Rockfish, orange, fillets, R	0.014	[]	AAS, []	Oregon, southern coast, [] (12)	Childs and Gaffke, 1974
	Hake, fillets, R	0.014	[]	AAS, []	Oregon, southern coast, [] (12)	Childs and Gaffke, 1974
	Sole, sand, fillets, R	0.014	[]	AAS, []	Oregon, southern coast, [] (12)	Childs and Gaffke, 1974
	Muskie (ESOX MASQUINONGY), R	0.014		AAS, 0.010	Waneta Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Drum, freshwater (APLODINOTUS GRUNNIENS), R	0.014	[]	AAS, 0.010	Lake Champlain, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Pike, northern (ESOX LUCIUS), R	0.014	[]	AAS, 0.010	Lake George, N.Y., 1969 (5)	Decapitated, eviscerated Lovett et al., 1972
	Pickerel, chain (ESOX NIGER), R	0.014	[]	AAS, 0.010	Trout Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.014	[]	AAS, 0.010	Lake Ontario, 1969 (10)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.014	[ ]	AAS, 0.010	Chenango River, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Bass, largemouth (MICROPTERUS SALMOIDES), R	0.014	[ ]	AAS, 0.010	Upper Saranac Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Sole, English, fillets, R	0.013	[ ]	AAS, [ ]	Oregon, southern coast, [ ] (12)	Childs and Gaffke, 1974
	Bullhead (ICTALURUS sp.), R	0.013	[ ]	AAS, 0.010	Hemlock Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.013	[ ]	AAS, 0.010	Utowana Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.013	[ ]	AAS, 0.010	Canadice Lake, N.Y., 1969 (5)	Decapitated, eviscerated Lovett et al., 1972
	Sole, Rex, fillets, R	0.012	[ ]	AAS, [ ]	Oregon, southern coast, [ ] (12)	Childs and Gaffke, 1974
	Sole, Petrale, fillets, R	0.012	[ ]	AAS, [ ]	Oregon, southern coast, [ ] (12)	Childs and Gaffke, 1974
	Bass, striped (MORONE SAXATILIS), R	0.012	[ ]	AAS, 0.010	Hudson River, N.Y., 1969 (6)	Decapitated, eviscerated Lovett et al., 1972
	Pickerel (ESOX NIGER), R	0.012	[ ]	AAS, 0.010	Canadice Lake, N.Y., 1969 (2)	Decapitated, eviscerated Lovett et al., 1972
	Crappie, black (POMOXIS NIGROMACULATUS), R	0.012		AAS, 0.010	Conesus Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Total diet sample (2), O	0.01	0.01-0.04	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (2), O	0.01	0.02-0.03	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (2), C	0.01	0.01-0.02	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Sole, Dover, fillets, B	0.01	[ ]	AAS, [ ]	Oregon, northern coast, [ ] (20)	Childs and Gaffke, 1974
	Total diet sample (2), C	0.01	0.01-0.02	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (2), O	0.01	0.01	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (2), C	0.01	0.01-0.04	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (2), O	0.01	0.01-0.03	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (2), C	0.01	0.01	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (2), C	0.01	0.01	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (2), C	0.01	0.01-0.02	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (2), C	0.01	0.01-0.02	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Total diet sample (2), O	0.01	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
	Total diet sample(2), O	0.01	0.01-0.02	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (2), O	0.0093	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Lingcod, fillets, R	0.009	[ ]	AAS, [ ]	Oregon, southern coast, [ ] (12)	Childs and Gaffke, 1974
	Sole, Petrale, fillets, R	0.008	[ ]	AAS, [ ]	Oregon, northern coast, [ ] (20)	Childs and Gaffke, 1974
	Flounder, starry, fillets, R	0.008	[ ]	AAS, [ ]	Oregon, southern coast, [ ] (12)	Childs and Gaffke, 1974
	Sole, English, fillets, R	0.007	[ ]	AAS, [ ]	Oregon, northern coast, [ ] (20)	Childs and Gaffke, 1974
	Pork, liver, R	0.00		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Trout, brown (SALMON TRUTTA), R	<0.010	[ ]	AAS, 0.010	Cohocton River, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Pike, walleye (STIZOSTEDION V. VITREUM), R	<0.010	[ ]	AAS, 0.010	Lake Champlain, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Pickerel, chain (ESOX NIGER), R	<0.010	[ ]	AAS, 0.010	Cayuga Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Trout, lake (SALVELINUS NAMAYCUSH), R	<0.010	[ ]	AAS, 0.010	Hemlock Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Trout, lake (SALVELINUS NAMAYCUSH), R	<0.010	[ ]	AAS, 0.010	Canandaigua Lake, N.Y., 1969 (3)	Decapitated, eviscerated Lovett et al., 1972
	Trout, lake (SALVELINUS NAMAYCUSH), R	<0.010		AAS, 0.010	Canadice Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Bass, largemouth (MICROPTERUS SALMOIDES), R	<0.010		AAS, 0.010	Cayuga Lake, N.Y., 1969 (1)	Decapitated, eviscerated Lovett et al., 1972
	Total diet sample (2), C	<0.01	0.01-0.02	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
MEAT, FISH, POULTRY	Clam, hard (MERCENARIA MERCENARIA), R	0.122	0.098-0.159	AAS, [ ]	Atlantic Ocean, Chincoteague Bay, 1971 (10)	Zook et al., 1976
OILS, FATS, SHORTENING	Total diet sample (10), R	0.03	0.02-0.04	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Manske and Corneliussen, 1974
	Total diet sample (10), R	0.03	0.02-0.04	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Manske and Johnson, 1975
	Total diet sample (10), R	0.03	0.02-0.03	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (10), R	0.03	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Johnson and Manske, 1976
	Total diet sample (10), R	0.027	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Mahaffey et al., 1975
	Total diet sample (10), R	0.02	0.01-0.04	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
OILS, FATS, SHORTENING	Total diet sample (10), R	0.02	0.01-0.05	AAS or P, 0.01	Minneapolis region 1971-1972 (7)	Manske and Johnson, 1975
	Total diet sample (10), R	0.02	0.01-0.03	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Manske and Corneliussen, 1974
	Total diet sample (10), R	0.02	0.01-0.03	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Manske and Corneliussen, 1974
	Total diet sample (10), R	0.02	0.01-0.04	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Manske and Johnson, 1975
	Total diet sample (10), R	0.02	0.01-0.04	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (10), R	0.02	0.01-0.03	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (10), R	0.02	0.01-0.04	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (10), R	0.02	0.01-0.04	AAS or P, 0.010	Boston region, 1969-1970 (6)	Corneliussen, 1972
	Total diet sample (10), R	0.02	0.01-0.07	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Manske and Johnson, 1977
	Total diet sample (10), R	0.01	0.01-0.06	AAS or P, 0.01	Boston region, 1971-1972 (7)	Manske and Johnson, 1975
	Total diet sample (10), R	0.01	0.01-0.03	AAS or P, 0.010	Boston region, 1970-1971 (6)	Manske and Corneliussen, 1974
	Total diet sample (10), R	0.01	0.01-0.02	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
OILS, FATS, SHORTENING	Oil, corn, O	0.003	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Garcia et al., 1974b
OTHER	Milk, R	0.027 (median)	0.0200-0.0340	AAS, [ ]	Cincinnati, Ohio, [ ] (33)	Pinkerton et al., 1973
	Type A school lunch, C	0.014 mg (total)	[ ]	AAS, 0.02	W region of USA, 1966 (32)	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	Type A school lunch, C	0.013 mg (total)	0.009-0.041 mg	AAS, 0.02	All regions of U.S., 1966 (300)	Ready to eat; served to 6th grade children Murphy et al., 1971a
	Type A school lunch, C	0.013 mg (total)	[ ]	AAS, 0.02	NE region USA, 1966 (51)	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	Type A school lunch, C	0.013 mg (total)	[ ]	AAS, 0.02	SE region of USA, 1966 (91)	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	Type A school lunch, O	0.013 mg (total)	[ ]	AAS, 0.02	SW region of USA, 1966 (48)	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	Type A school lunch, C	0.012 mg (total)	[ ]	AAS, 0.02	MW region of USA, 1966 (78)	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	Dextrimaltose, O	0.009		AAS, [ ]	Cincinnati, Ohio, 1968 (1)	Substitute milk product. Assayed as purchased. Murthy and Rhea, 1971
ROOT VEGETABLES	Carrot, F	1.5 (dry basis)	[ ]	AAS, [ ]	Beltsville, Maryland, [ ] (4)	"Normal" exposure area Lagerwerff and Brower, 1974
	Radish, R	1.01 (dry basis)	0.66-1.54 (dry basis)	AAS, [ ]	Howard, Boone and Audrain Counties, Missouri, [ ] (12)	Samples washed with distilled water. Normal exposure area. Hemphill et al., 1973

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Potato, F	0.28 (dry basis)	[ ]	AAS, [ ]	Beltsville, Maryland, [ ] (4)	"Normal" exposure area Lagerwerff and Brower, 1974
	Parsnip, R	0.140*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Potato (Total diet sample), O	0.06	0.03-0.14	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Potato (Total diet sample), O	0.06	0.02-0.09	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Potato (Total diet sample), O	0.05	0.03-0.10	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Potato (Total diet sample), O	0.05	0.02-0.09	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Potato (Total diet sample), O	0.05	0.02-0.10	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Potato (Total diet sample), O	0.05	0.03-0.08	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Potato (Total diet sample), O	0.05	0.02-0.13	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Prepared for eating Manske and Johnson, 1977
	Potato (Total diet sample), O	0.05	0.02-0.12	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Potato (Total diet sample), O	0.046	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Potato (Total diet sample), O	0.04	0.02-0.08	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Potato (Total diet sample), O	0.04	0.01-0.06	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Potato (Total diet sample), O	0.04	0.03-0.07	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Potato (Total diet sample), O	0.04	0.02-0.07	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (7), O	0.04	0.03-0.08	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Potato (Total diet sample), O	0.04	0.02-0.07	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Potato (Total diet sample), O	0.04	0.02-0.08	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Beet, greens, R	0.036		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Turnip, roots, R	0.030*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Total diet sample (7), O	0.03	0.02-0.07	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Total diet sample (7), C	0.03	0.01-0.06	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Potato (Total diet sample), O	0.03	0.02-0.04	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Potato (Total diet sample), O	0.03	0.02-0.04	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (7), O	0.03	0.01-0.31	AAS or P, 0.01	24 U.S. cities, 1973-1974 (24)	Prepared for eating Manske and Johnson, 1977
	Total diet sample (7), O	0.021	[]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Radish, R	0.020*	[]	Sp., 0.05 ug	Vermont, [] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Total diet sample (7), O	0.02	0.02-0.04	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Potato (Total diet sample), O	0.02	0.02-0.04	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (7), O	0.02	0.01-0.03	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (7), C	0.02	0.01-0.03	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Total diet sample (7), C	0.02	0.01-0.04	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (7), O	0.02	0.01-0.05	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (7), O	0.02	0.01-0.04	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (7), O	0.02	0.01-0.04	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (7), C	0.02	0.01-0.04	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (7), O	0.02	0.01-0.06	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (7), O	0.02	0.01-0.07	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (7), O	0.02	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
	Total diet sample (7), O	0.02	0.01-0.02	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (7), C	0.01	0.02-0.05	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Beet, R	0.009*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORYAND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Carrot, R	0.008*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Potato, R	0.003*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Onion, R	0.003*	[ ]	Sp., 0.05 ug	Vermont, [ ] ([ ])	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	Onion, yellow, R	0.00		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
SUGARS AND ADJUNCTS	Syrup, corn, dark, R	0.021 (dry basis)	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Garcia et al., 1974b
	Syrup, corn, light, R	0.020 (dry basis)	[ ]	AAS, <0.0027	Illinois, [ ] (4)	Garcia et al., 1974b
	Total diet sample (11), C	0.01	0.01-0.02	AAS or P, 0.010	Kansas City region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
SUGARS AND ADJUNCTS	Total diet sample (11), C	0.01	0.01-0.02	AAS or P, 0.01	Minneapolis region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (11), O	0.01	0.01	AAS or P, 0.010	Minneapolis region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (11), C	0.01	0.01-0.02	AAS or P, 0.010	Los Angeles region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (11), C	0.01	0.01-0.03	AAS or P, 0.010	Boston region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (11), O	0.01	0.02	AAS or P, 0.010	Baltimore region, 1970-1971 (6)	Prepared for eating Manske and Corneliussen, 1974
	Total diet sample (11), C	0.01	0.01-0.05	AAS or P, 0.01	Los Angeles region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (11), O	0.01	0.01-0.03	AAS or P, 0.01	Kansas City region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (11), C	0.01	0.01	AAS or P, 0.010	Baltimore region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (11), C	0.01	0.01	AAS or P, 0.010	Los Angeles region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (11), C	0.01	0.01-0.02	AAS or P, 0.010	Boston region, 1969-1970 (6)	Prepared for eating Corneliussen, 1972
	Total diet sample (11), C	0.01	0.01-0.06	AAS or P, 0.01	30 U.S. cities, 1972-1973 (30)	Prepared for eating Johnson and Manske, 1976
	Total diet sample (11), C	0.01	0.01-0.09	AAS or P, 0.01	30 U.S. cities, 1973-1974 (30)	Prepared for eating Manske and Johnson, 1977

(NEXT PAGE)

TABLE A.1. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
SUGARS AND ADJUNCTS	Total diet sample (11), C	0.0083	[ ]	AAS or P, 0.01	Representative U.S. cities, 1973 (30)	Prepared for eating Mahaffey et al., 1975
	Salt, iodized, R	0.006		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Salt, iodized, R	0.00		Sp., 0.05 ug	USA, [ ] (1)	Schroeder and Balassa, 1961
	Sugar, R	<0.05	[ ]	AAS, 0.05	USA, [ ] ([ ])	Fommer and Clarke, 1975
	Total diet sample (11), C	<0.01	[ ]	AAS or P, 0.01	Baltimore region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (11), C	<0.01	[ ]	AAS or P, 0.01	Boston region, 1971-1972 (7)	Prepared for eating Manske and Johnson, 1975
	Total diet sample (11), O	<0.01	0.01	AAS or P, 0.010	Minneapolis region, 1969-1970 (6)	Prepared for eating Corneliussen, 197[illegible]
	Total diet sample (11), C	<0.01	0.02	AAS or P, 0.010	Kansas City region, 1969-1970 (6)	Prepared for eating Corneliussen, 197[illegible]
	Sugar, refined, R	<0.00003	[ ]	AAS, 0.00003	USA, [ ] ([ ])	Fommer and Clarke, 1975

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS, REFERENCES
Apple, F	0.005		1	SP., 0.05 UG	USA, [ ]	Schroeder and Balassa, 1961
Bass, largemouth, R	0.036	0.020-0.048	11	AAS, [ ]	Wintergreen Lake, Michigan, [ ]	Mathis and Kevern, 1975
Bass, largemouth (MICROPTERUS SALMOIDES), R	0.020	[ ]	3	AAS, 0.010	Butterfield Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.016	[ ]	3	AAS, 0.010	Lake George, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.014	[ ]	2	AAS, 0.010	Upper Saranac Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	<0.010		1	AAS, 0.010	Cayuga Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Bass, silver, R	0.028	[ ]	8	AAS, 0.010	Lake Erie, eastern end, 1969	Decapitated, eviscerated Lovett et al., 1972
Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.025	[ ]	6	AAS, 0.010	St. Lawrence River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.022	[ ]	2	AAS, 0.010	Butterfield Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.022		1	AAS, 0.010	Blue Mountain Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.021		1	AAS, 0.010	Caroga Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

BLANK PAGE

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Bass, smallmouth (MICROPTERUS DOLOMIEUI), R	0.019		1	AAS, 0.010	Canandaigua Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.016	[ ]	10	AAS, 0.010	Lake Erie, eastern end, 1969	Decapitated, eviscerated Lovett et al., 1972
	0.014	[ ]	10	AAS, 0.010	Lake Ontario, 1969	Decapitated, eviscerated Lovett et al., 1972
	0.014	[ ]	3	AAS, 0.010	Chenango River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.013	[ ]	2	AAS, 0.010	Utowana Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.013	[ ]	5	AAS, 0.010	Canadice Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Bass, striped (MORONE SAXATILIS), R	0.012	[ ]	6	AAS, 0.010	Hudson River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Bass, white, R	0.060	[ ]	25	NT, [ ]	Lake Erie, western basin, 1970	Pillay et al., 1973
Bean, P	0.24	[ ]	4	AAS, [ ]	Beltsville, Maryland, [ ]	"Normal" exposure area Lagerwerff and Brower, 1974
Bean, green, R	<0.5 (dry basis)	[ ]	11	AAS, [ ]	Howard, Boone and Audrain Counties, Missouri., [ ]	Samples washed with distilled water. Normal exposure area. Hemphill et al., 1973
Bean, kidney, red, O	0.052		1	Sp., 0.05 ug	USA, [ ]	Dried Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Bean, lima, R	0.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Bean, navy, O	0.015		1	Sp., 0.05 ug	USA, [ ]	Dried Schroeder and Balassa, 1961
Bean, string, R	0.003*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Bean, yellow eye, O	0.012		1	Sp., 0.05 ug	USA, [ ]	Dried Schroeder and Balassa, 1961
Beef, chuck, R	0.024		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Beef, kidney, R	1.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.31		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.22		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Beef, liver, R	0.200		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.2		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Beef, liver, R	0.16		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Beet, R	0.009*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Beet, greens, R	0.036		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Buckwheat, seed, R	0.072		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Bullhead (ICTALURUS sp.), R	0.027	[ ]	3	AAS, 0.010	Blue Mountain Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.019	[ ]	3	AAS, 0.010	Butterfield Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.018		1	AAS, 0.010	Canadice Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.013	[ ]	3	AAS, 0.010	Hemlock Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Bullhead, brown (ICTALURUS sp.), R	0.023		1	AAS, 0.010	St. Lawrence River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Bullhead, yellow, R	0.034	0.021-0.049	6	AAS, [ ]	Wintergreen Lake, Michigan, [ ]	Mathis and Kevern, 1975

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cabbage, red, R	0.007		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Cabbage, white, R	0.008		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Carrot, F	1.5 (dry basis)	[ ]	4	AAS, [ ]	Beltsville, Maryland, [ ]	"Normal" exposure area Lagerwerff and Brower, 1974
Carrot, R	0.008*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Catfish, channel, R	0.057	[ ]	25	NT, [ ]	Lake Erie, western basin, 1970	Pillay et al., 1973
Catfish, channel (ICTALURUS sp.), R	0.023	[ ]	6	AAS, 0.010	Lake Champlain, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Catfish, channel, cultured (ICTALURUS PUNCTATUS), R	0.079	0.020-0.152	5	AAS, [ ]	Mississippi and Arkansas, 1971	Zook et al., 1976
Catfish, channel, wild (ICTALURUS PUNCTATUS), R	0.046	0.000-0.091	5	AAS, [ ]	Louisiana, [ ]	Zook et al., 1976
Chicory, R	0.038		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Clam, hard, R	0.188		1	Sp., 0.05 ug	New England, USA, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCE
Clam, hard (MERCENARIA MERCENARIA), F	0.122	0.098-0.159	10	AAS, [ ]	Atlantic Ocean, Chincoteague Bay, 1971	Zook et al., 1976
Clam, soft (MYA ARENARIA), R	0.184	0.059-0.293	10	AAS, [ ]	Chesapeake Bay, 1971	Zook et al., 1976
Clam, softshell, R	0.27	0.10-0.90	[ ]	AAS, [ ]	Atlantic coastal waters, [ ]	Ponk, 1971
Clam, surf (SPISULA SOLIDISSIMA), R	0.061	0.000-0.098	10	AAS, [ ]	Maryland, 1971	Zook et al., 1976
Cocoa, R	0.256		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.060		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Cod, Atlantic (GADUS MORHUA), F	0.048	0.000-0.155	10	AAS, [ ]	Atlantic Ocean, Middle Bank, 1971	Zook et al., 1976
Coffee, ground, R	0.013		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Coffee, instant, F	0.071		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Corn, O	0.254 (dry basis)	[ ]	4	AAS, <0.0027	Illinois, [ ]	Defatted, dry-milled flour Garcia et al., 1974b
	0.121	[ ]	4	AAS, <0.0027	Illinois, [ ]	Cheese-flavored snack food Garcia et al., 1974b
	0.072	[ ]	4	AAS, <0.0027	Illinois, [ ]	Corn chips (Snack food, brand A) Garcia et al., 1974b

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Corn, O	0.070	[ ]	4	AAS, <0.0027	Illinois, [ ]	Breakfast flakes Garcia et al., 1974b
	0.065		1	Sp., 0.05 ug	New Hampshire, [ ]	Meal, special Schroeder and Balassa, 1961
	0.049	[ ]	4	AAS, <0.0027	Illinois, [ ]	Corn chips (Snack food, brand B) Garcia et al., 1974b
	0.00		1	Sp., 0.05 ug	USA, [ ]	Dried, old Schroeder and Balassa, 1961
Corn, R	0.00		1	Sp., 0.05 ug	USA, [ ]	On cob - Schroeder and Balassa, 1961
Corn (ZEA MAYS L.), grain, R	0.8 (dry basis)	[ ]	2	AAS, [ ]	Dayton, Ohio, 1973	No known contamination Kirkham, 1975
Corn, dent, whole kernel, R	0.055 (dry basis)	0.035-0.148 (dry basis)	11	AAS, <0.0027	Representative U.S. corn states, [ ]	Garcia et al., 1974b
Corn, fresh, R	0.075		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Corn, white, C	0.022 (dry basis)	[ ]	4	AAS, <0.0027	Illinois, [ ]	Meal Garcia et al., 1974b
	0.013 (dry basis)	[ ]	4	AAS, <0.0027	Illinois, [ ]	Grits Garcia et al., 1974b
Corn, white, sweet, C	0.031	[ ]	4	AAS, <0.0027	Illinois, [ ]	Brand C Garcia et al., 1974b
Corn, whole kernel, white, F	0.061 (dry basis)	[ ]	6	AAS, <0.0027	Texas, [ ]	Garcia et al., 1974a
	0.042 (dry basis)	[ ]	6	AAS, <0.0027	Illinois, [ ]	Garcia et al., 1974a

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Corn, whole kernel, white, F	0.035 (dry basis)	[]	6	AAS, <0.0027	Indiana, []	Garcia et al., 1974a
Corn, whole kernel, yellow, F	0.148 (dry basis)	[]	6	AAS, <0.0027	Kansas and Missouri, []	Garcia et al., 1974a
	0.065 (dry basis)	[]	6	AAS, <0.0027	Iowa, []	Garcia et al., 1974a
	0.039 (dry basis)	[]	6	AAS, <0.0027	Illinois, []	Garcia et al., 1974a
Corn, yellow, O	0.060	[]	4	AAS, <0.0027	Illinois, []	Briquettes, processed breakfast food Garcia et al., 1974b
	0.042 (dry basis)	[]	4	AAS, 0.0027	Illinois, []	Meal Garcia et al., 1974 b
Corn, yellow, sweet, C	0.014	[]	4	AAS, <0.0027	Illinois, []	Brand B Garcia et al., 1974b
Corn, yellow, whole kernel, F	0.005	[]	4	AAS, <0.0027	Illinois, []	Brand A Garcia et al., 1974b
Crab (CALLINECTES SAPIDUS), F	0.07 (dry basis)	[]	23	AAS, []	Georgia estuary, []	Claw meat analyzed. Stickney et al., 1975
Crab, blue (CALLINECTES SAPIDUS), O	0.101	0.020-0.158	10	AAS, []	Chesapeake Bay, 1971	Cooked commercially Zook et al., 1976
Crab, king, body meat (PARALITHODES CAMSCHATICA), O	0.121	0.020-0.189	10	AAS, []	Cook's Inlet, Alaska, 1970-1971	Cooked commercially Zook et al., 1976
Crab, king, leg meat (PARALITHODES CAMSCHATICA), O	0.072	0.000-0.166	[illegible]	AAS, []	Cook's Inlet, Alaska, 1970-1971	Cooked commercially Zook et al., 1976
Crappie, black (POMOXIS NIGROMACULATUS), F	0.015	[]	3	AAS, 0.010	Lake George, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, BY [illegible]
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS, REFERENCE
Crappie, black (POMOXIS NIGROMACULATUS), R	0.012		1	AAS, [illegible]	Oneida Lake, N.Y., [illegible]	Decapitated, eviscerated. Lovett et al., [illegible]
Croaker (MICROPOGON UNDULATUS), R	0.04 (dry basis)	[]	27	AAS, []	Georgia estuary, []	Muscle tissue analyzed. Stickney et al., [illegible]
Deer, kidney, R	11.7		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
	6.58		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
	4.12		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
	3.70		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
	2.38		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
	2.37		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
	2.10		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
Deer, kidney, left, R	3.60		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961
Deer, kidney, right, R	4.02		1	Sp., 0.05 at	USA, []	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Deer, liver, R	0.74		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.56		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.44		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.35		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Dextrimaltose, O	0.009		1	AAS, [ ]	Cincinnati, Ohio, 1968	Substitute milk product. Assayed as purchased. Murthy and Rhea, 1971
Drum (STELLIFER LANCEOLATUS), R	0.04 (dry basis)	[ ]	32	AAS, [ ]	Georgia estuary, [ ]	Muscle tissue analyzed. Stickney et al., 1975
Drum, freshwater, R	0.077	[ ]	25	NT, [ ]	Lake Erie, western basin, 1970	Pillay et al., 1973
Drum, freshwater (APLODINOTUS GRUNNIENS), R	0.029	[ ]	19	AAS, 0.010	Lake Erie, eastern end, 1969	Decapitated, eviscerated Lovett et al., 1972
	0.014	[ ]	3	AAS, 0.010	Lake Champlain, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Duck, ruddy, liver (OXYURA JAMAICENSIS), R	0.61	0.27-1.60	8	AAS, 0.01	New Jersey, 1973	White and Kaiser, 1976
Escarole, R	0.016		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Fish, mixed species, R	0.08	0.04-0.17	48	MS, [ ]	New York, 1969-1972	Data for individual fish given by authors. Tong et al., 1972
Fish, mixed species, whole, R	0.09	0.05-1.83	391	AAS, 0.05	98 U.S. stations, 1972	Average computed assuming Cd to be zero in "undetected" samples. Walsh et al., 1977
	0.03	0.05-0.21	66	AAS, 0.05	17 USA stations, 1971	Average computed assuming Cd to be zero in "undetected" sample. Walsh et al., 1977
	0.02	0.05-0.54	584	AAS, 0.05	100 USA stations, 1971	Average computed assuming Cd to be zero in "undetected" samples. Walsh et al., 1977
Flounder, starry, fillets, F	0.008	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
Flounder, yellowtail (LIMANDA FERRUGINEA), R	0.028	0.000-0.059	10	AAS, [ ]	Atlantic Ocean, South Georges Bank, 1971	Zook et al., 1976
Flour, No. 1, R	0.088		1	Sp., 0.05 ug	Minneapolis, [ ]	Schroeder and Balassa, 1961
	0.075		1	Sp., 0.05 ug	Minneapolis, [ ]	Schroeder and Balassa, 1961
Flour, No. 2, R	0.059		1	Sp., 0.05 ug	Minneapolis, [ ]	Schroeder and Balassa, 1961
Haddock (MELANOGRAMMUS AEGLEFINUS), R	0.046	0.000-0.083	10	AAS, [ ]	Atlantic Ocean, Middle Bank, 1971	Zook et al., 1976

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Hake, fillets, R	0.014	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
Hake, Pacific (MERLUCCIUS PRODUCTUS), R	0.020	0.000-0.059	10	AAS, [ ]	Pacific Ocean, Gray's Harbor, 1971	Zook et al., 1976
Hake, silver (MERLUCCIUS BILINEARIS), R	0.047	0.000-0.200	10	AAS, [ ]	Atlantic Ocean, Ipswich Bay, 1971	Zook et al., 1976
Halibut, Pacific (HIPPOGLOSSUS STENOLEPIS), R	0.046	0.009-0.080	10	AAS, [ ]	Pacific Ocean, Gulf of Alaska, 1970	Zook et al, 1976
Kale, R	0.038		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Kohlrabi, leaves, R	0.024		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Lamb, chops, R	0.015		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Lamb, kidney, R	0.14		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Lettuce, F	0.84 (dry basis)	[ ]	4	AAS, [ ]	Beltsville, Maryland, [ ]	"Normal" exposure area Lagerwerff and Brower, 1974
Lettuce, early curled, R	0.005*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Lettuce, garden, R	0.017		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Lettuce, iceberg, R	0.040*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
	0.010		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Lettuce, leaf, R	1.2 (dry basis)	0.60-1.85 (dry basis)	11	AAS, [ ]	Howard, Boone and Audrain Counties, Missouri, [ ]	Samples washed with distilled water. Normal exposure area. Hemphill et al., 1973
Lingcod, fillets, R	0.224	[ ]	10	AAS, [ ]	Oregon, northern coast, [ ]	Childs and Gaffke, 1974
	0.009	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
Lobster, claw, R	0.101		1	Sp., 0.05 ug	Maine, [ ]	Schroeder and Balassa, 1961
Lobster, spiny (PANULIRUS BOREALIS), O	0.133	0.059-0.233	10	AAS, [ ]	Atlantic Ocean, Florida, [ ]	Cooked split tails Zook et al., 1976
Lobster, tail, R	0.132		1	Sp., 0.05 ug	Maine, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Milk, O	0.042	[]	4	AAS, []	Cincinnati, Ohio, 1968	Evaporated and canned, Brand 1. Assayed as purchased. Murthy and Rhea, 1971
	0.040	[]	4	AAS, []	Cincinnati, Ohio, 1968	Canned, evaporated, Brand 4. Assayed as purchased. Murthy and Rhea, 1971
	0.039	[]	4	AAS, []	Cincinnati, Ohio, 1968	Soy flour added; Formula 3. Assayed as purchased. Murthy and Rhea, 1971
	0.038	[]	4	AAS, []	Cincinnati, Ohio, 1968	Canned, evaporated, Brand 3. Assayed as purchased. Murthy and Rhea, 1971
	0.035	[]	4	AAS, []	Cincinnati, Ohio, 1968	Canned, evaporated, Brand 2. Assayed as purchased. Murthy and Rhea, 1971
	0.021	[]	4	AAS, []	Cincinnati, Ohio, 1968	Lamb meat added; Formula 4. Assayed as purchased. Murthy and Rhea, 1971
	0.021	[]	4	AAS, []	Cincinnati, Ohio, 1968	Modified, Formula 2. Assayed as purchased. Murthy and Rhea, 1971
	0.020	[]	4	AAS, []	Cincinnati, Ohio, 1968	Modified, Formula 1. Assayed as purchased. Murthy and Rhea, 1971
	0.006	[]	315	AAS, []	California, []	Composite of nonfat, lowfat, regular, and extrarich Bruhn and Franke, 1974

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Milk, R	0.4 ug/100 ml (wet wt.)	[ ]	7	AAS, [ ]	Missouri, 1972	Winter samples from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975
	0.4 ug/100 ml (wet wt.)	[ ]	4	AAS, [ ]	Missouri, 1972	Fall samples from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975
	0.3 ug/100 ml (wet wt.)	[ ]	5	AAS, [ ]	Missouri, 1972	Summer samples from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975
	0.3 ug/100 ml (wet wt.)		1	AAS, [ ]	Missouri, 1972	Spring sample from unpolluted area. Soil cont'd 0.4 to 0.6 ug Cd/g, dry wt. Dorn et al., 1975
	0.026	0.017-0.030	305	AAS, [ ]	61 U.S. cities, 1965-1967	Murthy and Rhea, 1968
	0.026	0.020-0.037	32	AAS, [ ]	Cincinnati, Ohio, [ ]	Murthy and Rhea, 1968
	0.0054	[ ]	[ ]	AAS, [ ]	California, [ ]	Bruhn and Franke, 1975
	0.027 (median)	0.0200-0.0340	33	AAS, [ ]	Cincinnati, Ohio, [ ]	Pinkerton et al., 1973
Milk, Fall, R	0.43 ug/100 ml (wet wt.)	[ ]	4	AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972	"Normal" exposure farm. Dorn et al., 1973
Milk, human, R	0.019	[ ]	22	AAS, [ ]	Cincinnati, Ohio, 1968	Murthy and Rhea, 1971
	0.0111 (median)	0.0088-0.1335	23	AAS, [ ]	Cincinnati, Ohio, [ ]	Pinkerton et al., 1973

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Milk, pasteurized, Fall, R	0.024 (median)	0.018-0.039	59	AAS, [ ]	59 U.S. cities, 1965	Pinkerton et al., 1972
Milk, pasteurized, Spring, P	0.027 (median)	0.018-0.037	59	AAS, [ ]	59 U.S. cities, 1965	Pinkerton et al., 1972
	0.026 (median)	0.017-0.041	59	AAS, [ ]	59 U.S. Cities, 1967	Pinkerton et al., 1972
Milk, skim, O	0.0024 (dry basis)	[ ]	2 or 3	P, 0.0005	USA, [ ]	Dried, foam-spray Cornell and Pallansch, 1973
Milk, Spring, R	0.30 ug/100 ml (wet wt.)		1	AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972	"Normal" exposure farm Dorn et al., 1973
	0.0030	0.0018-0.0038	5	AAS, [ ]	Galena, Kansas, 1972	Low exposure area; >3 km downwind from lead smelter. Lagerwerff and Brower, 1974
Milk, Summer, R	0.34 ug/100 ml (wet wt.)	[ ]	5	AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972	"Normal" exposure farm Dorn et al., 1973
Milk, whole, O	0.0029 (dry basis)	[ ]	2 or 3	P, 0.0005	USA, [ ]	Freeze-dried Cornell and Pallansch, 1973
	0.0023 (dry basis)	[ ]	2 or 3	P, 0.0005	USA, [ ]	Freeze-dried Cornell and Pallansch, 1973
	0.0019 (dry basis)	[ ]	2 or 3	P, 0.0005	USA, [ ]	Freeze-dried Cornell and Pallansch, 1973
	0.0017 (dry basis)	[ ]	2 or 3	P, 0.0005	USA, [ ]	Freeze-dried Cornell and Pallansch, 1973
	0.0016 (dry basis)	[ ]	2 or 3	P, 0.0005	USA, [ ]	Freeze-dried Cornell and Pallansch, 1973

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Milk, whole, O	0.0016	[ ]	2 or 3	P, 0.0005	USA, [ ]	Freeze-dried Cornell and Pallansch, 1973
	0.0007 (dry basis)	[ ]	2 or 3	P, 0.0005	USA, [ ]	Freeze-dried Cornell and Pallansch, 1973
Milk, Winter, P	0.40 ug/100 ml (wet wt.)	[ ]	4	AAS, 0.2 ug/100 ml	Reynolds County, Missouri, 1971-1972	"Normal" exposure farm Dorn et al., 1973
	0.0044	0.0031-0.0054	4	AAS, [ ]	Beltsville, Maryland, 1973	"Normal" exposure area Lagerwerff and Brower, 1974
Muskie (ESOX MASQUINONGY), R	0.014		1	AAS, 0.010	Waneta Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Mussel, R	0.147		1	Sp., 0.05 ug	New England, USA, [ ]	Schroeder and Balassa, 1961
Mussel (MYTILUS CALIFORNIANUS), P	1.88	1.43-2.63	9	AAS, [ ]	California coast, 1973	Vattuone et al., 1976
Oats, O	0.163		1	Sp., 0.05 ug	USA, [ ]	Oatmeal Schroeder and Balassa, 1961
	0.127		1	Sp., 0.05 ug	USA, [ ]	Precooked Schroeder and Balassa, 1961
Oats, seed, R	0.024		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Oats, whole, R	0.081		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Oil, corn, C	0.003	[ ]	4	AAS, <0.0027	Illinois, [ ]	Garcia et al., 1974b

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Onion, F	0.003*	[ ]	[ ]	Sp., 0.05 ug	Vermont+, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Onion, yellow, R	0.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Oyster, C	1.598		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Oyster, R	0.715	[ ]	6	Sp., 0.05 ug	Cape Cod, USA, [ ]	Schroeder and Balassa, 1961
	0.605		1	Sp., 0.05 ug	Cape Cod, USA, [ ]	Schroeder and Balassa, 1961
Oyster (CRASSOSTREA VIRGINICA), R	2.06	1.60-2.37	10	AAS, [ ]	Long Island Sound, 1971	Zook et al., 1976
	0.621	0.375-1.29	10	AAS, [ ]	Chesapeake Bay, 1971	Zook et al., 1976
	0.62	0.05-1.61	108	NT, 0.05	Mobile Bay, 1968-1969	Kopfler and Mayer, 1973
Oyster, eastern, R	3.10	0.10-7.80	[ ]	AAS, [ ]	Atlantic coastal waters, [ ]	Ronk, 1971
Oyster, Quahaug, northern, R	0.19	0.10-0.73	[ ]	AAS, [ ]	Atlantic coastal waters, [ ]	Ronk, 1971

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Parsnip, F	0.140*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Pea, F	0.42 (dry basis)	[ ]	4	AAS, [ ]	Beltsville, Maryland, [ ]	"Normal" exposure area Lagerwerff and Brower, 1974
	0.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Pea, green, O	0.040		1	Sp., 0.05 ug	USA, [ ]	Dried, split Schroeder and Balassa, 1961
Pea, green, R	0.001*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Peanut, O	0.130		1	Sp., 0.05 ug	USA, [ ]	Roasted, fresh Schroeder and Balassa, 1961
Perch (BAIRDIELLA CHRYSURA), R	0.12 (dry basis)	[ ]	5	AAS, [ ]	Georgia estuary, [ ]	Muscle tissue analyzed. Stickney et al., 1975
Perch, ocean (SEBASTES MARINUS), R	0.069	0.000-0.200	10	AAS, [ ]	Atlantic Ocean, Gulf of Maine, 1971	Zook et al., 1976
Perch, yellow, R	0.057	[ ]	25	NT, [ ]	Lake Erie, western basin, 1970	Pillay et al., 1973

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Perch, yellow, R	0.040	0.019-0.073	13	AAS, [ ]	Wintergreen Lake, Michigan, [ ]	Mathis and Kevern, 1975
Perch, yellow (PERCA sp.), R	0.051	[ ]	2	AAS, 0.010	Susquehanna River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.016	[ ]	10	AAS, 0.010	Lake Erie, eastern end, 1969	Decapitated, eviscerated Lovett et al., 1972
Pickerel (ESOX NIGER), R	0.012	[ ]	2	AAS, 0.010	Canadice Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Pickerel, chain (ESOX NIGER), R	0.018	[ ]	3	AAS, 0.010	Hemlock Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.014	[ ]	3	AAS, 0.010	Trout Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	<0.010	[ ]	3	AAS, 0.010	Cayuga Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Pike, northern (ESOX LUCIUS), R	0.045	[ ]	4	AAS, 0.010	Butterfield Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.018	[ ]	2	AAS, 0.010	Indian Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.014	[ ]	5	AAS, 0.010	Lake George, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Pike, walleye (STIZOSTEDION V. VITREUM), R	0.064		1	AAS, 0.010	Susquehanna River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Pike, walleye (STIZOSTEDION V. VITREUM), R	0.016	[ ]	8	AAS, 0.010	Lake Erie, eastern end, 1969	Decapitated, eviscerated Lovett et al., 1972
	0.015	[ ]	4	AAS, 0.010	St. Lawrence River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	<0.010	[ ]	3	AAS, 0.010	Lake Champlain, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Pollock (POLLACHIUS VIRENS), F	0.048	0.000-0.110	10	AAS, [ ]	Atlantic Ocean, Middle Bank, 1971	Zook et al., 1976
Popcorn, whole kernel, unpopped, R	0.048	[ ]	4	AAS, <0.0027	Illinois, [ ]	Garcia et al., 1974b
Pork, chops, R	0.025		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Pork, kidney, R	0.60		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.29		1	Sp., 0.05 ug	USA, [ ]	Schtoeder and Balassa, 1961
	0.25		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.17		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.15		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Pork, liver, R	0.100		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Pork, liver, R	0.1		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Potato, F	0.28 (dry basis)	[ ]	4	AAS, [ ]	Beltsville, Maryland, [ ]	"Normal" exposure area Lagerwerff and Brower, 1974
Potato, R	0.003*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Potato (Total diet sample), C	0.06	0.03-0.14	7	AAS or F, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.06	0.02-0.09	7	AAS or F, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.05	0.03-0.10	7	AAS or F, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.05	0.02-0.09	6	AAS or F, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.05	0.02-0.10	7	AAS or F, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.05	0.03-0.09	6	AAS or F, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Potato (Total diet sample), C	0.05	0.02-0.13	30	AAS or P, 0.01	30 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.05	0.02-0.12	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
	0.046	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975
	0.04	0.02-0.08	6	AAS or P, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.04	0.01-0.06	6	AAS or P, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.04	0.03-0.07	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.04	0.02-0.07	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.04	0.02-0.07	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.04	0.02-0.08	6	AAS or P, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.03	0.02-0.04	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.03	0.02-0.04	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.02-0.04	7	AAS or P, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Rabbit, wild, male, kidney, R	3.58		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Rabbit, wild, male, liver, R	0.30		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Radish, R	1.01 (dry basis)	0.66-1.54 (dry basis)	12	AAS, [ ]	Howard, Boone and Audrain Counties, Missouri, [ ]	Samples washed with distilled water. Normal exposure area. Hemphill et al., 1973
	0.020*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963
Rhubarb, F	0.57 (dry basis)	[ ]	4	AAS, [ ]	Beltsville, Maryland, [ ]	"Normal" exposure area Lagerwerff and Brower, 1974
Rice, O	0.038		1	Sp., 0.05 ug	USA, [ ]	Precooked Schroeder and Balassa, 1961
Rockfish, mixed species, F	0.031	0.000-0.074	10	AAS, [ ]	Pacific Ocean, coast of California, 1971	Zook et al., 1976
Rockfish, orange, fillets, F	0.088	[ ]	14	AAS, [ ]	Oregon, northern coast, [ ]	Childs and Gaffke, 1974
	0.014	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
Rye, whole, R	0.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Salmon, C	0.017		1	Sp., 0.05 ug	Alaska, [ ]	Schroeder and Balassa, 1961
Salmon, Coho, R	0.039	[ ]	25	NT, [ ]	Lake Erie, western basin, 1970	Pillay et al., 1973
Salmon, Coho (ONCORHYNCHUS KISUTCH), R	0.024	[ ]	9	AAS, 0.010	Cattaraugus Creek, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.019	[ ]	6	AAS, 0.010	Lake Erie, eastern end, 1969	Decapitated, eviscerated Lovett et al., 1972
	0.016	[ ]	3	AAS, 0.010	Spring Brook, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Salmon, old, liver, R	0.15		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Salmon, sockeye (ONCORHYNCHUS NERKA), C	0.067	0.038-0.159	10	AAS, [ ]	Pacific, Naknek River, 1971	Zook et al., 1976
Salmon, young, liver, R	0.19		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Salt, iodized, R	0.006		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Scallop, Atlantic (AEQUIPECTEN IRRADIANS), R	0.035	0.000-0.100	10	AAS, [ ]	Nantucket Island, 1970	Only abductor muscle analyzed Zook et al., 1976

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Scallop, calico (AEQUIPECTEN GIBBUS), R	2.34	1.57-3.19	10	AAS, [ ]	Atlantic Ocean, Cape Canaveral, Fla., 1971-1972	Only abductor muscle analyzed Zook et al., 1976
Scallop, rock (HINNITES MULTIRUGOSUS), R	31.2	1.8-46.8	11	AAS, [ ]	California coast, 1973	Vattuone et al., 1976
Scallop, smooth (PLACOPECTEN MAGELLANICUS), R	0.136	0.040-0.234	10	AAS, [ ]	Atlantic Ocean, South Channel, 1971	Only abductor muscle analyzed Zook et al., 1976
Shrimp, C	0.100		1	Sp., 0.05 ug	USA, [ ]	Fresh, cooked Schroeder and Balassa, 1961
Shrimp (PENAEUS AZTECUS), R	0.07 (dry basis)	[ ]	14	AAS, [ ]	Georgia estuary, [ ]	Edible muscle tissue analyzed. Stickney et al., 1975
Shrimp (PENAEUS SETIFERUS), R	0.04 (dry basis)	[ ]	82	AAS, [ ]	Georgia estuary, [ ]	Edible muscle tissue analyzed. Stickney et al., 1975
Shrimp, Alaskan, mixed species, C	0.069	0.018-0.114	10	AAS, [ ]	Pacific Ocean, S of Marmot Island, Alaska, 1971	Cooked, peeled and deveined tails Zook et al., 1976
Shrimp, brown (PENAEUS AZTECUS), O	0.045	0.000-0.119	10	AAS, [ ]	Gulf of Mexico, 1971	Raw peeled tails Zook et al., 1976
Shrimp, pink (PANDALUS BOREALIS), C	0.069	0.000-0.200	10	AAS, [ ]	Atlantic Ocean, Middle Bank, [ ]	Raw peeled tails Zook et al., 1976
Shrimp, white (PENAEUS SETIFERUS), O	0.079	0.056-0.112	10	AAS, [ ]	Gulf of Mexico, 1971	Raw peeled tails Zook et al., 1976
Shrimp, white (PENAEUS SETIFERUS), R	0.049	0.000-0.076	10	AAS, [ ]	Atlantic, Cape Canaveral, 1971	Zook et al., 1976
Snapper, red (LUTJANUS CAMPECHANUS), R	0.057	0.000-0.119	11	AAS, [ ]	Gulf of Mexico, 1971	Zook et al., 1976

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Sole, Dover, fillets, R	0.014	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
	0.01	[ ]	20	AAS, [ ]	Oregon, northern coast, [ ]	Childs and Gaffke, 1974
Sole, English, fillets, R	0.013	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
	0.007	[ ]	20	AAS, [ ]	Oregon, northern coast, [ ]	Childs and Gaffke, 1974
Sole, Petrale, fillets, R	0.012	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
	0.008	[ ]	20	AAS, [ ]	Oregon, northern coast, [ ]	Childs and Gaffke, 1974
Sole, Rex, fillets, R	0.026	[ ]	20	AAS, [ ]	Oregon, northern coast, [ ]	Childs and Gaffke, 1974
	0.012	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
Sole, sand, fillets, R	0.014	[ ]	12	AAS, [ ]	Oregon, southern coast, [ ]	Childs and Gaffke, 1974
Spinach, R	0.006		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Spot (LEIOSTOMUS XANTHURUS), R	0.04 (dry basis)	[ ]	34	AAS, [ ]	Georgia estuary, [ ]	Muscle tissue analyzed. Stickney et al., 1975

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Squirrel, grey, male, kidney, R	3.62		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Squirrel, red, female, kidney, R	17.35		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Squirrel, red, female, liver, R	0.80		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Squirrel, red, male, kidney, R	7.97		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Squirrel, red, male, liver, R	2.03		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Squirrel, rock, liver, R	6.1 (dry basis)	0.1-55.8 (dry basis)	108	AAS, [ ]	Utah, 1974-1976	Cd content of soil, 0.8-11.5 ppm (dry basis) Sharma and Shupe, 1977
Sturgeon (ACIPENSER sp.), R	0.026	[ ]	11	AAS, 0.010	St. Lawrence River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Sturgeon, Atlantic (ACIPENSER sp.), R	0.092	[ ]	4	AAS, 0.010	Hudson River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Sugar, R	<0.05	[ ]	[ ]	AAS, 0.05	USA, [ ]	Fommez and Clarke, 1975
Sugar, refined, R	<0.00003	[ ]	[ ]	AAS, 0.00003	USA, [ ]	Fommez and Clarke, 1975
Swordfish, R	0.037		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Syrup, corn, dark, R	0.021 (dry basis)	[ ]	4	AAS, <0.0027	Illinois, [ ]	Garcia et al., 1974b
Syrup, corn, light, R	0.020 (dry basis)	[ ]	4	AAS, <0.0027	Illinois, [ ]	Garcia et al., 1974b
Tea, black, R	0.050		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Tea, green, R	0.200		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Tomato, F	0.22 (dry basis)	[ ]	4	AAS, [ ]	Beltsville, Maryland, [ ]	"Normal" exposure area Lagerwerff and Brower, 1974
Tomato, C	0.024		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
	0.017		1	Sp., 0.05 ug	USA, [ ]	Juice Schroeder and Balassa, 1961
Tomato, R	0.00		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Total diet sample (1), O	0.01	0.01-0.03	7	AAS or P, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.14	30	AAS or P, 0.01	30 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.005	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (1), O	<0.01	0.01	7	AAS or P, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	0.01	7	AAS or P, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	[ ]	7	AAS or P, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	0.01	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	0.01	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.01	6	AAS or P, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.01	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.01	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.01-0.06	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
Total diet sample (10), R	0.03	0.02-0.04	6	AAS or P, 0.010	Minneapolis region, 1970-1971	Manske and Corneliussen, 1974
	0.03	0.02-0.04	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Manske and Johnson, 1975
	0.03	0.02-0.03	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Corneliussen, 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (10), R	0.03	0.01-0.06	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Johnson and Manske, 1976
	0.027	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Mahaffey et al., 1975
	0.02	0.01-0.04	7	AAS or F, 0.01	Baltimore region, 1971-1972	Manske and Johnson, 1975
	0.02	0.01-0.05	7	AAS or F, 0.01	Minneapolis region, 1971-1972	Manske and Johnson, 1975
	0.02	0.01-0.03	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Manske and Corneliussen, 1974
	0.02	0.01-0.03	6	AAS or F, 0.010	Kansas City region, 1970-1971	Manske and Corneliussen, 1974
	0.02	0.01-0.04	7	AAS or F, 0.01	Kansas City region, 1971-1972	Manske and Johnson, 1975
	0.02	0.01-0.04	6	AAS or F, 0.010	Baltimore region, 1969-1970	Corneliussen, 1972
	0.02	0.01-0.03	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Corneliussen, 1972
	0.02	0.01-0.04	6	AAS or F, 0.010	Kansas City region, 1969-1970	Corneliussen, 1972
	0.02	0.01-0.04	6	AAS or F, 0.010	Boston region, 1969-1970	Corneliussen, 1972
	0.02	0.01-0.07	30	AAS or P, 0.01	30 U.S. cities, 1973-1974	Manske and Johnson, 1977

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (10), B	0.01	0.01-0.06	7	AAS or P, 0.01	Boston region, 1971-1972	Manske and Johnson, 1975
	0.01	0.01-0.03	6	AAS or F, 0.010	Boston region, 1970-1971	Manske and Corneliussen, 1974
	0.01	0.01-0.02	6	AAS or F, 0.010	Baltimore region, 1970-1971	Manske and Corneliussen, 1974
Total diet sample (11), O	0.01	0.01-0.02	6	AAS or P, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01-0.02	7	AAS or F, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01	6	AAS or F, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01-0.02	6	AAS or F, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01-0.03	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.02	6	AAS or F, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01-0.05	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01-0.03	7	AAS or F, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (11), O	0.01	0.01	6	AAS or P, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.02	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.06	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
	0.01	0.01-0.09	30	AAS or P, 0.01	30 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.0083	[]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975
	<0.01	[]	7	AAS or P, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	[]	7	AAS or P, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	0.01	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.02	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
Total diet sample (12), O	0.01	0.01-0.04	6	AAS or P, 0.010	Kansas City region, 1969-1970	Corneliussen, 1972
	0.0057	[]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Mahaffey et al., 1975
	<0.01	0.01	6	AAS or P, 0.010	Baltimore region, 1969-1970	Corneliussen, 1972
	<0.01	0.01	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Corneliussen, 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (12), O	<0.01	0.01	6	AAS or P, 0.010	Kansas City region, 1969-1970	Corneliussen, 1972
	<0.01	0.01-0.08	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Johnson and Manske, 1976
	<0.01	0.01-0.03	6	AAS or P, 0.01	6 U.S. cities, 1973-1974	Manske and Johnson, 1977
Total diet sample (2), O	0.02	0.01-0.07	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.03	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.06	21	AAS or P, 0.01	21 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.01	0.01-0.04	7	AAS or P, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.02-0.03	7	AAS or P, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01-0.02	7	AAS or P, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01-0.02	6	AAS or P, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01-0.04	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (2), C	0.01	0.01-0.03	7	AAS or P, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01	6	AAS or P, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.02	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.02	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.06	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
	0.0093	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 197[illegible]	Prepared for eating Mahaffey et al., 1975
	<0.01	0.01-0.02	6	AAS or P, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
Total diet sample (3), C	0.04	0.02-0.05	7	AAS or P, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.04	0.01-0.06	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.03	0.01-0.05	7	AAS or P, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.03	0.02-0.03	7	AAS or P, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.03	0.02-0.03	6	AAS or P, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (3), O	0.03	0.01-0.07	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.03	0.02-0.05	7	AAS or P, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.03	0.02-0.03	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.03	0.02-0.05	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
	0.03	0.02-0.05	30	AAS or P, 0.01	30 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.028	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975
	0.02	0.01-0.02	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.01-0.04	6	AAS or P, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.01-0.04	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.02-0.03	6	AAS or P, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.02	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.02-0.06	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (3), O	0.02	0.01-0.03	6	AAS or P, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
Total diet sample (5), O	0.08	0.01-0.4	7	AAS or P, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.08	0.02-0.20	6	AAS or P, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.07	0.03-0.14	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.06	0.02-0.14	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.06	0.02-0.14	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.051	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975
	0.05	0.02-0.08	7	AAS or P, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.05	0.03-0.08	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.05	0.02-0.09	7	AAS or P, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.05	0.03-0.10	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.05	0.01-0.28	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (5), O	0.04	0.01-0.14	30	AAS or F, 0.01	30 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.03	0.02-0.05	7	AAS or F, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.03	0.02-0.06	6	AAS or F, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.03	0.01-0.05	6	AAS or F, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.02-0.03	6	AAS or F, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.01-0.04	6	AAS or F, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
Total diet sample (5), O	0.06	0.03-0.11	7	AAS or F, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
Total diet sample (6), O	0.01	0.02-0.05	7	AAS or F, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.02-0.03	7	AAS or F, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01-0.02	7	AAS or F, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01-0.04	6	AAS or F, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.03	6	AAS or F, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (6), C	0.01	0.01-0.10	8	AAS or P, 0.01	9 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.007	0.01-0.02	6	AAS or P, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.007	0.02	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.007	0.01-0.02	6	AAS or P, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.006	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975
	0.003	0.01	6	AAS or P, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.003	0.01	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	<0.01	[ ]	7	AAS or P, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	0.01-0.02	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	<0.01	0.01	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.02	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.01-0.03	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (7), C	0.04	0.03-0.08	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.03	0.02-0.07	7	AAS or P, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.03	0.01-0.06	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.03	0.01-0.31	24	AAS or P, 0.01	24 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.021	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975
	0.02	0.02-0.04	7	AAS or P, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.03	7	AAS or P, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.03	6	AAS or P, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.01-0.04	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.01-0.05	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.04	7	AAS or P, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.04	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (7), O	0.02	0.01-0.04	6	AAS or P, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.06	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.07	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.06	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
	0.02	0.01-0.02	6	AAS or P, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.02-0.05	6	AAS or P, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
Total diet sample (8), O	0.03	0.02-0.06	7	AAS or P, 0.01	Minneapolis region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.03	0.01-0.10	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.08	7	AAS or P, 0.01	Boston region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.06	7	AAS, 0.01	Baltimore region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.05	6	AAS or P, 0.010	Minneapolis region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.02	0.01-0.02	6	AAS or P, 0.010	Los Angeles region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (8), C	0.02	0.01-0.05	7	AAS or P, 0.01	Kansas City region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.02	0.01-0.02	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.03	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.07	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.02	0.01-0.06	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
	0.02	0.01-0.13	30	AAS or P, 0.01	30 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
	0.019	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975
	0.01	0.01-0.04	6	AAS or P, 0.010	Kansas City region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01-0.02	6	AAS or P, 0.010	Boston region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
	0.01	0.01-0.02	7	AAS or P, 0.01	Los Angeles region, 1971-1972	Prepared for eating Manske and Johnson, 1975
	0.01	0.01	6	AAS, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
Total diet sample (8), R	0.01	0.01-0.02	6	AAS or P, 0.010	Baltimore region, 1969-1970	Prepared for eating Corneliussen, 1972
Total diet sample (9), O	0.042	[ ]	30	AAS or P, 0.01	Representative U.S. cities, 1973	Prepared for eating Mahaffey et al., 1975

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FCCD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Total diet sample (9), C	0.02	0.01-0.07	6	AAS or P, 0.010	Boston region, 1969-1970	Prepared for eating Corneliussen, 1972
	0.01	0.01-0.06	6	AAS or P, 0.010	Los Angeles region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.01	6	AAS or P, 0.010	Kansas City region, 1969-1970	Prepared for eating Corneliussen, 1972
	<0.01	0.01-0.02	30	AAS or P, 0.01	30 U.S. cities, 1972-1973	Prepared for eating Johnson and Manske, 1976
	<0.01	0.01-0.06	30	AAS or P, 0.01	30 U.S. cities, 1973-1974	Prepared for eating Manske and Johnson, 1977
Total diet sample (9), F	<0.01	0.01	6	AAS or P, 0.010	Minneapolis region, 1969-1970	Prepared for eating Corneliussen, 1972
Total diet sample(2), O	0.01	0.01-0.02	6	AAS or P, 0.010	Baltimore region, 1970-1971	Prepared for eating Manske and Corneliussen, 1974
Trout, brown (SALMON TRUTTA), R	0.021	[]	3	AAS, 0.010	Chittenango Creek, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	<0.010	[]	3	AAS, 0.010	Cohocton River, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Trout, lake (SALVELINUS NAMAYCUSH), R	0.080	[]	3	AAS, 0.010	Fourth Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.030	[]	2	AAS, 0.010	West Canada Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	<0.010	[]	3	AAS, 0.010	Hemlock Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Trout, lake (SALVELINUS NAMAYCUSH), R	<0.010	[ ]	3	AAS, 0.010	Canandaigua Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	<0.010		1	AAS, 0.010	Canadice Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Trout, rainbow (SALMO GAIRDNERI), R	0.024	[ ]	2	AAS, 0.010	Blue Mountain Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.019		1	AAS, 0.010	8th Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.017	[ ]	2	AAS, 0.010	Utowana Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.016	[ ]	2	AAS, 0.010	Skaneateles Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.016	[ ]	2	AAS, 0.010	Canadice Lake, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
	0.015	[ ]	4	AAS, 0.010	Lake George, N.Y., 1969	Decapitated, eviscerated Lovett et al., 1972
Tuna, C	0.062		1	Sp., 0.05 ug	Oregon, [ ]	Schroeder and Balassa, 1961
Turnip, roots, R	0.030*	[ ]	[ ]	Sp., 0.05 ug	Vermont, [ ]	Superphosphate fertilizer containing 7.25 ppm Cd was applied at rate of 45 kg per 360 square meters. Soil pH was 7.0. Schroeder and Balassa, 1963

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Type A school lunch, O	0.014 mg (total)	[ ]	32	AAS, 0.02	W region of USA, 1966	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	0.013 mg (total)	0.009-0.041 mg	300	AAS, 0.02	All regions of U.S., 1966	Ready to eat; served to 6th grade children Murphy et al., 1971a
	0.013 mg (total)	[ ]	51	AAS, 0.02	NE region USA, 1966	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	0.013 mg (total)	[ ]	91	AAS, 0.02	SE region of USA, 1966	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	0.013 mg (total)	[ ]	48	AAS, 0.02	SW region of USA, 1966	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
	0.012 mg (total)	[ ]	78	AAS, 0.02	NW region of USA, 1966	Ready-to-eat; served to 6th grade children Murphy et al., 1971b
Veal, kidney, R	0.04		1	Sp., 0.05 ug	USA, [ ]	Schroeder and Balassa, 1961
Walleye, R	0.053	[ ]	25	NT, [ ]	Lake Erie, western basin, 1970	Pillay et al., 1973
Weakfish (CYNOSCION REGALIS), R	0.05 (dry basis)	[ ]	7	AAS, [ ]	Georgia estuary, [ ]	Muscle tissue analyzed. Stickney et al., 1975
Wheat, C	0.304	[ ]	4	AAS, <0.0027	Illinois, [ ]	Wheat germ, 11% fat content Garcia et al., 1974b
	0.22 (dry basis)	[ ]	5	AAS, 0.015	USA, [ ]	Bread, sponge-dough Zook et al., 1970
	0.22 (dry basis)	[ ]	28	AAS, 0.015	10 U.S. cities, [ ]	Wheat flakes, breakfast product. Zook et al., 1970

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Wheat, O	0.19 (dry basis)	[ ]	29	AAS, 0.015	10 U.S. cities, [ ]	Bread, white, continuous mix Zook et al., 1970
	0.16 (dry basis)	[ ]	5	AAS, 0.015	USA, [ ]	Bread, continuous-mix Zook et al., 1970
	0.16 (dry basis)	[ ]	38	AAS, 0.015	10 U.S. cities, [ ]	Bread, whole wheat Zook et al., 1970
	0.16 (dry basis)	[ ]	52	AAS, 0.015	10 U.S. cities, [ ]	Bread, white, conventional dough Zook et al., 1970
	0.16 (dry basis)	[ ]	23	AAS, 0.015	10 U.S. cities, [ ]	Biscuit mix Zook et al., 1970
	0.150		1	Sp., 0.05 ug	USA, [ ]	Wheatena Schroeder and Balassa, 1961
	0.15 (dry basis)	[ ]	2	AAS, 0.015	USA, [ ]	Flour, cracker Zook et al., 1970
	0.14 (dry basis)	[ ]	5	AAS, 0.015	USA, [ ]	Flour, cracker Zook et al., 1970
	0.130		1	Sp., 0.05 ug	Vermont, [ ]	Stone ground Schroeder and Balassa, 1961
	0.129		1	Sp., 0.05 ug	Vermont, [ ]	Crushed Schroeder and Balassa, 1961
	0.12 (dry basis)	[ ]	52	AAS, 0.015	10 U.S. cities, [ ]	Rolls, hamburger Zook et al., 1970
	0.11 (dry basis)	[ ]	2	AAS, 0.015	USA, [ ]	Macaroni Zook et al., 1970
	0.10 (dry basis)	[ ]	6	AAS, 0.015	USA, [ ]	Flour, cake Zook et al., 1970

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FCCD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Wheat, O	0.10 (dry basis)	[ ]	2	AAS, 0.015	USA, [ ]	Semolina Zook et al., 1970
	0.10 (dry basis)	[ ]	47	AAS, 0.015	10 U.S. cities, [ ]	Shredded-wheat breakfast product Zook et al., 1970
	0.10 (dry basis)	[ ]	28	AAS, 0.015	10 U.S. cities, [ ]	Doughnuts, cake Zook et al., 1970
	0.08 (dry basis)	[ ]	24	AAS, 0.015	10 U.S. cities, [ ]	Cereal-to-be-cooked Zook et al., 1970
	0.07 (dry basis)	[ ]	2	AAS, 0.015	USA, [ ]	Flour, cut-off (cracker) Zook et al., 1970
	0.05 (dry basis)	[ ]	5	AAS, 0.015	USA, [ ]	Flour, Baker's patent Zook et al., 1970
	0.05 (dry basis)	[ ]	5	AAS, 0.015	USA, [ ]	Flour, straight grade Zook et al., 1970
	0.05 (dry basis)	[ ]	6	AAS, 0.015	USA, [ ]	Flour, soft patent (cake) Zook et al., 1970
	0.03 (dry basis)	[ ]	31	AAS, 0.015	10 U.S. cities, [ ]	Flour, all-purpose Zook et al., 1970
	0.015		1	Sp., 0.05 ug	USA, [ ]	Wheaties Schroeder and Balassa, 1961
	0.012		1	Sp., 0.05 ug	USA, [ ]	Bread, stone ground Schroeder and Balassa, 1961
Wheat (TRITICUM sp.), R	0.34 (dry basis)		1	AAS, [ ]	Illinois, 1969-1970	Normal exposure Huffman and Hodgson, 1973
	0.32 (dry basis)	[ ]	5	AAS, [ ]	Nebraska, 1969-1970	Normal exposure Huffman and Hodgson, 1973

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Wheat (TRITICUM sp.), R	0.25 (dry basis)	[ ]	1	AAS, [ ]	Virginia, 1969-1970	Normal exposure Huffman and Hodgson, 1973
	0.22 (dry basis)	[ ]	4	AAS, [ ]	North Carolina, 1969-1970	Normal exposure Huffman and Hodgson, 1973
	0.20	0.12-0.34	33	AAS, [ ]	10 U.S. states, 1969-1970	Normal exposure. Huffman and Hodgson, 1973
	0.19 (dry basis)	[ ]	9	AAS, [ ]	Colorado, 1969-1970	Normal exposure Huffman and Hodgson, 1973
	0.18 (dry basis)		1	AAS, [ ]	Georgia, 1969-1970	Normal exposure. Huffman and Hodgson, 1973
	0.16 (dry basis)	[ ]	7	AAS, [ ]	Kansas, 1969-1970	Normal exposure Huffman and Hodgson, 1973
	0.14 (dry basis)	[ ]	2	AAS, [ ]	Texas, 1969-1970	Normal exposure Huffman and Hodgson, 1973
	0.12 (dry basis)	[ ]	2	AAS, [ ]	Oklahoma, 1969-1970	Normal exposure Huffman and Hodgson, 1973
	0.12 (dry basis)		1	AAS, [ ]	Kentucky, 1969-1970	Normal exposure. Huffman and Hodgson, 1973
Wheat, common, hard, R	0.10(dry basis)	[ ]	5	AAS, 0.015	USA, [ ]	Zook et al, 1970
Wheat, common, soft, R	0.07 (dry basis)	[ ]	4	AAS, 0.015	USA, [ ]	Zook et al., 1970
Wheat, Durum, R	0.13 (dry basis)	[ ]	2	AAS, 0.015	USA, [ ]	Zook et al., 1970

(NEXT PAGE)

TABLE A.2. CADMIUM IN U.S. FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Wheat, Winter, R	0.057		1	Sp., 0.05 uq	USA, [ ]	Schroeder and Balassa, 1961

TABLE A.3. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Milk, Winter, R	0.42 ug/100 ml (wet wt.)	[ ]	AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972 (6)	Farm 800 m from lead smelter Dorn et al., 1973
	Milk, R	0.4 ug/100 ml (wet wt.)	[ ]	AAS, [ ]	Missouri, 1972 (6)	Winter samples taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975
	Milk, Fall, R	0.30 ug/100 ml (wet wt.)	[ ]	AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972 (3)	Farm 800 m from lead smelter Dorn et al., 1973
	Milk, Spring, R	0.30 ug/100 ml (wet wt.)	[ ]	AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972 (2)	Farm 800 m from lead smelter Dorn et al., 1973
	Milk, R	0.3 ug/100 ml (wet wt.)	[ ]	AAS, [ ]	Missouri, 1972 (3)	Fall samples taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975
	Milk, R	0.3 ug/100 ml (wet wt.)	[ ]	AAS, [ ]	Missouri, 1972 (2)	Spring samples taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975
	Milk, Summer, R	0.20 ug/100 mg (wet wt.)		AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972 (1)	Farm 800 m from lead smelter Dorn et al., 1973
	Milk, R	0.2 ug/100 ml (wet wt.)		AAS, [ ]	Missouri, 1972 (1)	Summer sample taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975

(NEXT PAGE)

BLANK PAGE

TABLE A.3. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Milk, Spring, R	0.0029	0.0013-0.0041	AAS, [ ]	Galena, Kansas, 1972 (5)	High exposure area; <2 km downwind from lead smelter Lagerwerff and Brower, 1974
	Milk, Winter, R	0.0026	0.0023-0.0029	AAS, [ ]	Galena, Kansas, 1973 (6)	High exposure area; <2 km downwind from lead smelter Lagerwerff and Brower, 1974
GARDEN FRUITS	Cauliflower, [ ]	2.6 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 2.3 ppm Cd (dry basis). Ratsch, 1974
	Tomato, F	1.8 (dry basis)	[ ]	AAS, [ ]	Galena, Kansas, Before 1971 (8)	High exposure area near lead smelter Lagerwerff and Brower, 1974
GRAIN AND CEREAL	Wheat, grain, R	3.37 (dry basis)	[ ]	AAS, [ ]	Blackwell, Oklahoma, 1971-1973 (9)	Computed from regression equation for distance of 1 mile from smelter. Benenati, 1974
	Wheat, grain, R	3.12 (dry basis)	[ ]	AAS, [ ]	Blackwell, Oklahoma, 1971-1973 (9)	Computed from regression equation for distance of 2 miles from smelter. Benenati, 1974
	Wheat, grain, R	2.87 (dry basis)	[ ]	AAS, [ ]	Blackwell, Oklahoma, 1971-1973 (9)	Computed from regression equation for distance of 3 miles from smelter. Benenati, 1974
	Wheat, grain, R	2.62 (dry basis)	[ ]	AAS, [ ]	Blackwell, Oklahoma, 1971-1973 (9)	Computed from regression equation for distance of 4 miles from smelter. Benenati, 1974

(NEXT PAGE)

TABLE A.3. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Wheat, grain, R	2.37 (dry basis)	[ ]	AAS, [ ]	Blackwell, Oklahoma, 1971-1973 (9)	Computed from regression equation for distance of 5 miles from smelter. Benenati, 1974
	Corn (ZEA MAYS L.), grain, R	1.0 (dry basis)	[ ]	AAS, [ ]	Dayton, Ohio, 1973 (2)	Soil sat'd with supernant liquid from sludge-holding lagoons between 1968 and 1971 (Sludge: 830 mg Cd/kg in 1971) Kirkham, 1975
	Corn (ZEA MAYS L.), grain, R	0.9 (dry basis)	[ ]	AAS, [ ]	Dayton, Ohio, 1973 (2)	456 metric tons sludge per ha added between 1930 and 1965. Soil cont'd est'd 0.36 metric tons Cd per ha in 1973. Kirkham, 1975
LEAFY VEGETABLES	Lettuce, R	13.02 (dry basis)	3.3-34.5 (dry basis)	AAS, [ ]	Old Lead Belt counties, Missouri, [ ] ([ ])	Local lead smelter operated since 1890s. Hemphill, 1974
	Lettuce, leaf, R	13.02 (dry basis)	3.29-34.5 (dry basis)	AAS, [ ]	Missouri, [ ] (9)	Near lead smelter Hemphill et al., 1973
	Cabbage, [ ]	8.2 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 1.5 ppm Cd (dry basis). Ratsch, 1974
	Cabbage, [ ]	7.9 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 2.5 ppm Cd (dry basis). Ratsch, 1974
	Cabbage, [ ]	7.8 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Washed sample had 6.6 ppm (dry basis). Soil contained 8.3 ppm Cd (dry basis). Ratsch, 1974

(NEXT PAGE)

TABLE A.3. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Cabbage, [ ]	5.3 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 0.9 ppm Cd (dry basis). Ratsch, 1974
	Brussels sprout, [ ]	5.3 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 1.4 ppm Cd (dry basis). Ratsch, 1974
	Lettuce, F	3.8 (dry basis)	[ ]	AAS, [ ]	Galena, Kansas, Before 1971 (4)	High exposure area near lead smelter Lagerwerff and Brower, 1974
	Cauliflower, [ ]	3.5 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 7.8 ppm Cd (dry basis). Ratsch, 1974
	Cabbage, [ ]	3.0 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 1.5 ppm Cd (dry basis). Ratsch, 1974
	Cabbage, [ ]	2.9 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 2.9 ppm Cd (dry basis). Ratsch, 1974
	Rhubarb, F	2.6 (dry basis)	[ ]	AAS, [ ]	Galena, Kansas, Before 1971 (6)	High exposure area near lead smelter Lagerwerff and Brower, 1974
	Cabbage, [ ]	2.4 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 12.0 ppm Cd (dry basis). Ratsch, 1974
	Cauliflower, [ ]	2.4 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 1.7 ppm Cd (dry basis) Ratsch, 1974

(NEXT PAGE)

TABLE A.3. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Brussels sprout, [ ]	2.3 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 1.86 ppm Cd (dry basis). Ratsch, 1974
	Lettuce, R	1.90 (dry basis)	0.5-7.00 (dry basis)	AAS, [ ]	New Lead Belt counties, Missouri, [ ] (28)	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
	Lettuce, leaf, R	1.89 (dry basis)	0.50-5.03 (dry basis)	AAS, [ ]	Old Lead Belt counties, Missouri, [ ] (30)	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
	Cabbage, [ ]	1.5 (dry basis)	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 7.0 ppm Cd (dry basis). Ratsch, 1974
	Brussels sprout, [ ]	1.2	[ ]	AAS, [ ]	Tacoma, Washington, [ ] ([ ])	Near copper smelter. Soil contained 1.8 ppm Cd (dry basis). Ratsch, 1974
LEGUME VEGETABLES	Bean, green, R	2.36 (dry basis)	0.5-8.5 (dry basis)	AAS, [ ]	Old Lead Belt counties, Missouri, [ ] ([ ])	Local lead smelter operated since 1890s. Hemphill, 1974
	Bean, green, R	2.36 (dry basis)	0.5-8.5 (dry basis)	AAS, [ ]	Missouri, [ ] (8)	Near lead smelter. Hemphill et al., 1973
	Bean, F	0.73 (dry basis)	[ ]	AAS, [ ]	Galena, Kansas, Before 1971 (4)	High exposure area near lead smelter Lagerwerff and Brower, 1974
	Pea, F	0.70 (dry basis)	[ ]	AAS, [ ]	Galena, Kansas, Before 1971 (4)	High exposure area near lead smelter Lagerwerff and Brower, 1974

(NEXT PAGE)

TABLE A.3. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEGUME VEGETABLES	Bean, green, R	0.70 (dry basis)	0.50-1.10 (dry basis)	AAS, [ ]	Old Lead Belt counties, Missouri, [ ] (30)	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
	Bean, green, R	<0.5 (dry basis)	[ ]	AAS, [ ]	New Lead Belt counties, Missouri, [ ] (28)	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
MEAT, FISH, POULTRY	Crab (MURSIA GAUDICHAUDII), R	0.80	0.6-1.0	AAS, 0.0625	Southern California coastal waters, [ ] (2)	Muscle analyzed. Seabed contaminated with high level of toxic metals in sediments. Fowler et al., 1975
ROOT VEGETABLES	Carrot, P	8.0 (dry basis)	[ ]	AAS, [ ]	Galena, Kansas, Before 1971 (4)	High exposure area near lead smelter Lagerwerff and Brower, 1974
	Radish, R	4.72 (dry basis)	1.18-13.7 (dry basis)	AAS, [ ]	Old Lead Belt counties, Missouri, [ ] ([ ])	Local lead smelter operated since 1890s. Hemphill, 1974
	Radish, R	4.72 (dry basis)	1.18-13.70 (dry basis)	AAS, [ ]	Missouri, [ ] (8)	Near lead smelter Hemphill et al., 1973
	Potato, P	1.9 (dry basis)	[ ]	AAS, [ ]	Galena, Kansas, Before 1971 (14)	High exposure area near lead smelter Lagerwerff and Brower, 1974
	Radish, R	0.84 (dry basis)	0.50-2.00 (dry basis)	AAS, [ ]	Old Lead Belt counties, Missouri, [ ] (30)	Sample washed with distilled water. Polluted area. Hemphill et al., 1973
	Radish, R	0.72 (dry basis)	0.5-1.97 (dry basis)	AAS, [ ]	New Lead Belt counties, Missouri, [ ] (28)	Samples washed with distilled water. Polluted area. Hemphill et al., 1973

TABLE A.4. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS, REFERENCES
Bean, F	0.73 (dry basis)	[]	4	AAS, []	Galena, Kansas, Before 1971	High exposure area near lead smelter Lagerwerff and Brower, 1974
Bean, green, R	2.36 (dry basis)	0.5-8.5 (dry basis)	[]	AAS, []	Old Lead Belt counties, Missouri, []	Local lead smelter operated since 1890s. Hemphill, 1974
	2.36 (dry basis)	0.5-8.5 (dry basis)	8	AAS, []	Missouri, []	Near lead smelter. Hemphill et al., 1973
	0.70 (dry basis)	0.50-1.10 (dry basis)	30	AAS, []	Old Lead Belt counties, Missouri, []	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
	<0.5 (dry basis)	[]	28	AAS, []	New Lead Belt counties, Missouri, []	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
Brussels sprout, []	5.3 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 1.4 ppm Cd (dry basis). Ratsch, 1974
	2.3 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 1.86 ppm Cd (dry basis). Ratsch, 1974
	1.2	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 1.8 ppm Cd (dry basis). Ratsch, 1974
Cabbage, []	8.2 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 1.5 ppm Cd (dry basis). Ratsch, 1974

(NEXT PAGE)

TABLE A.4. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cabbage, []	7.9 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 2.5 ppm Cd (dry basis). Ratsch, 1974
	7.8 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Washed sample had 6.6 ppm (dry basis). Soil contained 8.3 ppm Cd (dry basis). Ratsch, 1974
	5.3 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 0.9 ppm Cd (dry basis). Ratsch, 1974
	3.0 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 1.5 ppm Cd (dry basis). Ratsch, 1974
	2.9 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 2.9 ppm Cd (dry basis). Ratsch, 1974
	2.4 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 12.0 ppm Cd (dry basis). Ratsch, 1974
	1.5 (dry basis)	[]	[]	AAS, []	Tacoma, Washington, []	Near copper smelter. Soil contained 7.0 ppm Cd (dry basis). Ratsch, 1974
Carrot, F	8.0 (dry basis)	[]	4	AAS, []	Galena, Kansas, Before 1971	High exposure area near lead smelter Lagerwerff and Brower, 1974

(NEXT PAGE)

TABLE A.4. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cauliflower, [ ]	2.6 (dry basis)	[ ]	[ ]	AAS, [ ]	Tacoma, Washington, [ ]	Near copper smelter. Soil contained 2.3 ppm Cd (dry basis). Batsch, 1974
	3.5 (dry basis)	[ ]	[ ]	AAS, [ ]	Tacoma, Washington, [ ]	Near copper smelter. Soil contained 7.8 ppm Cd (dry basis). Batsch, 1974
	2.4 (dry basis)	[ ]	[ ]	AAS, [ ]	Tacoma, Washington, [ ]	Near copper smelter. Soil contained 1.7 ppm Cd (dry basis) Batsch, 1974
Corn (ZEA MAYS L.), grain, R	1.0 (dry basis)	[ ]	2	AAS, [ ]	Dayton, Ohio, 1973	Soil sat'd with supernant liquid from sludge-holding lagoons between 1968 and 1971 (Sludge: 830 mg Cd/kg in 1971) Kirkham, 1975
	0.9 (dry basis)	[ ]	2	AAS, [ ]	Dayton, Ohio, 1973	456 metric tons sludge per ha added between 1930 and 1965. Soil cont'd est'd 0.36 metric tons Cd per ha in 1973. Kirkham, 1975
Crab (MURSIA GAUDICHAUDII), R	0.80	0.6-1.0	2	AAS, 0.0625	Southern California coastal waters, [ ]	Muscle analyzed. Seabed contaminated with high level of toxic metals in sediments. Fowler et al., 1975
Lettuce, R	3.8 (dry basis)	[ ]	4	AAS, [ ]	Galena, Kansas, Before 1971	High exposure area near lead smelter Lagerwerff and Brower, 1974

(NEXT PAGE)

TABLE A.4. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Lettuce, R	13.02 (dry basis)	3.3-34.5 (dry basis)	[ ]	AAS, [ ]	Old Lead Belt counties, Missouri, [ ]	Local lead smelter operated since 1890s. Hemphill, 1974
	1.90 (dry basis)	0.5-7.00 (dry basis)	28	AAS, [ ]	New Lead Belt counties, Missouri, [ ]	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
Lettuce, leaf, R	13.02 (dry basis)	3.29-34.5 (dry basis)	9	AAS, [ ]	Missouri, [ ]	Near lead smelter Hemphill et al., 1973
	1.89 (dry basis)	0.50-5.03 (dry basis)	30	AAS, [ ]	Old Lead Belt counties, Missouri, [ ]	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
Milk, R	0.4 ug/100 ml (wet wt.)	[ ]	6	AAS, [ ]	Missouri, 1972	Winter samples taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975
	0.3 ug/100 ml (wet wt.)	[ ]	3	AAS, [ ]	Missouri, 1972	Fall samples taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975
	0.3 ug/100 ml (wet wt.)	[ ]	2	AAS, [ ]	Missouri, 1972	Spring samples taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975
	0.2 ug/100 ml (wet wt.)		1	AAS, [ ]	Missouri, 1972	Summer sample taken 800 m from lead smelter. Soil cont'd 0.6-0.9 ug Cd/g, dry wt. Dorn et al., 1975

(NEXT PAGE)

TABLE A.4. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Milk, Fall, R	0.30 ug/100 ml (wet wt.)	[ ]	3	AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972	Farm 800 m from lead smelter Dorn et al., 1973
Milk, Spring, R	0.30 ug/100 ml (wet wt.)	[ ]	2	AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972	Farm 800 m from lead smelter Dorn et al., 1973
	0.0029	0.0013-0.0041	5	AAS, [ ]	Galena, Kansas, 1972	High exposure area; <2 km downwind from lead smelter Lagerwerff and Brower, 1974
Milk, Summer, R	0.20 ug/100 mg (wet wt.)		1	AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972	Farm 800 m from lead smelter Dorn et al., 1973
Milk, Winter, R	0.42 ug/100 ml (wet wt.)	[ ]	6	AAS, 0.2 ug/100 ml	Iron County, Missouri, 1971-1972	Farm 800 m from lead smelter Dorn et al., 1973
	0.0026	0.0023-0.0029	6	AAS, [ ]	Galena, Kansas, 1973	High exposure area; <2 km downwind from lead smelter Lagerwerff and Brower, 1974
Pea, R	0.70 (dry basis)	[ ]	4	AAS, [ ]	Galena, Kansas, Before 1971	High exposure area near lead smelter Lagerwerff and Brower, 1974
Potato, R	1.9 (dry basis)	[ ]	14	AAS, [ ]	Galena, Kansas, Before 1971	High exposure area near lead smelter Lagerwerff and Brower, 1974
Radish, R	4.72 (dry basis)	1.18-13.7 (dry basis)	[ ]	AAS, [ ]	Old Lead Belt counties, Missouri, [ ]	Local lead smelter operated since 1890s. Hemphill, 1974
	4.72 (dry basis)	1.18-13.70 (dry basis)	8	AAS, [ ]	Missouri, [ ]	Near lead smelter Hemphill et al., 1973

(NEXT PAGE)

TABLE A.4. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Radish, R	0.84 (dry basis)	0.50-2.00 (dry basis)	30	AAS, [ ]	Old Lead Belt counties, Missouri, [ ]	Sample washed with distilled water. Polluted area. Hemphill et al., 1973
	0.72 (dry basis)	0.5-1.97 (dry basis)	28	AAS, [ ]	New Lead Belt counties, Missouri, [ ]	Samples washed with distilled water. Polluted area. Hemphill et al., 1973
Rhubarb, F	2.6 (dry basis)	[ ]	6	AAS, [ ]	Galena, Kansas, Before 1971	High exposure area near lead smelter Lagerwerff and Brower, 1974
Tomato, F	1.8 (dry basis)	[ ]	8	AAS, [ ]	Galena, Kansas, Before 1971	High exposure area near lead smelter Lagerwerff and Brower, 1974
Wheat, grain, R	3.37 (dry basis)	[ ]	9	AAS, [ ]	Blackwell, Oklahoma, 1971-1973	Computed from regression equation for distance of 1 mile from smelter. Benenati, 1974
	3.12 (dry basis)	[ ]	9	AAS, [ ]	Blackwell, Oklahoma, 1971-1973	Computed from regression equation for distance of 2 miles from smelter. Benenati, 1974
	2.87 (dry basis)	[ ]	9	AAS, [ ]	Blackwell, Oklahoma, 1971-1973	Computed from regression equation for distance of 3 miles from smelter. Benenati, 1974
	2.62 (dry basis)	[ ]	9	AAS, [ ]	Blackwell, Oklahoma, 1971-1973	Computed from regression equation for distance of 4 miles from smelter. Benenati, 1974

(NEXT PAGE)

TABLE A.4. CADMIUM IN U.S. FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Wheat, grain, R	2.37 (dry basis)	[]	9	AAS, []	Blackwell, Oklahoma, 1971-1973	Computed from regression equation for distance of 5 miles from smelter. Benenati, 1974

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
BEVERAGES	Cocoa and drinking chocolate, R	0.09	0.04-0.14	AAS, 0.01	U.K., 1971-1972 (2)	Ministry of Agriculture, Fisheries and Food, 1973
	Sake, R	0.075		Sp., 0.05 ug	Shizuoka, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Coffee, instant, R	0.07	0.04-0.08	AAS, 0.01	U.K., 1971-1972 (3)	Ministry of Agriculture, Fisheries and Food, 1973
	Tea, O	0.07	0.02-0.14	AAS, 0.01	Osaka and Hyogo, Japan, [ ] (5)	Dried Ikebe et al., 1977a
	Coffee, O	0.064	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Ready to use Essing et al., 1969
	Tea, green, dry, R	0.036 (dry basis)	0.013-0.098 (dry basis)	AAS, [ ]	Japan, 1974 (139)	Tsushida and Takeo, 1977
	Tea, nine brands, R	0.03	0.01-0.06	AAS, 0.01	U.K., 1971-1972 (9)	Ministry of Agriculture, Fisheries and Food, 1973
	Coffee, bean, R	0.03	0.02-0.04	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Wine, red, R	0.017	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Tea, O	0.011	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Ready to use Essing et al., 1969
	Coffee, green; coffee instant; cocoa; tea, R	0.0101	0.0002-0.0505	AAS, 0.0002	Alsace, France, [ ] (5)	Laugel et al., 1976
	Tea, black, O	0.01	0.01-0.04	AAS, 0.01	Hyogo and Tokyo, Japan, [ ] (5)	Dried Ikebe et al., 1977a

(NEXT PAGE)

BLANK PAGE

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
BEVERAGES	Wine, white, R	0.009	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Beer, R	0.008	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Wine, R	0.007	0.003-0.008	P, 0.25 ng Cd/ml	West Germany, 1974 (9)	Collet, 1975
	Tea, coarse, green, R	0.005		Sp., 0.05 ug	Japan, [ ] (1)	Schroeder and Balassa, 1961
	Spirits, R	0.004	0.003-0.005	P, 0.25 ng Cd/ml	West Germany, 1974 (4)	Collet, 1975
	Tea, fine, green, R	0.002		Sp., 0.05 ug	Japan, [ ] (1)	Schroeder and Balassa, 1961
	Tea, refined, green, R	0.001		Sp., 0.05 ug	Japan, [ ] (1)	Schroeder and Balassa, 1961
	Soda, beer, wine, R	0.0006 ug/ml	0.0002-0.0060 ug/ml	AAS, 0.0002	Alsace, France, [ ] (16)	Laugel et al., 1976
	Wine, R	<0.05	[ ]	AAS, 0.01	U.K., 1971-1972 (57)	Ministry of Agriculture, Fisheries and Food, 1973
	Spirits, R	<0.02	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (10)	Ministry of Agriculture, Fisheries and Food, 1973
	Wine, R	<0.010	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Brandy, plum, R	<0.010	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
BEVERAGES	Fruit juices, R	<0.01	[ ]	AAS, 0.01	U.K., 1971-1972 (7)	Ministry of Agriculture, Fisheries and Food, 1973
	Fruit juices, C	<0.01	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (19)	Ministry of Agriculture, Fisheries and Food, 1973
	Coffee, O	<0.01	0.01	AAS, 0.01	Osaka, Tokyo, and Hyogo, Japan, [ ] (3)	Powdered extract, instant Ikebe et al., 1977a
	Soft drink, R	<0.003	0.002-0.005	AAS, 0.002	U.K., 1971-1972 (8)	Ministry of Agriculture, Fisheries and Food, 1973
	Soft drink, C	<0.003	0.002-0.006	AAS, 0.002	U.K., 1971-1972 (5)	Ministry of Agriculture, Fisheries and Food, 1973
	Beer and cider, O	<0.002	[ ]	AAS, 0.01	U.K., 1971-1972 (6)	Bottled Ministry of Agriculture, Fisheries and Food, 1973
	Beer, C	<0.002	[ ]	AAS, 0.01	U.K., 1971-1972 (4)	Ministry of Agriculture, Fisheries and Food, 1973
DAIRY PRODUCTS	Cheese, mild cheddar, R	0.12	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Cheese, tasty cheddar, R	0.07	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Milk, O	0.07	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Powdered skim Guthrie, 1975
	Cheese, white, R	0.039	0.050-0.085	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Margarine, R	0.035	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Butter, R	0.034	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Cheese, R	0.0309	0.0150-0.0560	AAS, 0.0002	Alsace, France, [ ] (10)	Laugel et al., 1976
	Milk powder, C	0.03	0.01-0.06	AAS, 0.01	U.K., 1971-1972 (2)	Ministry of Agriculture, Fisheries and Food, 1973
	Margarine, polyunsaturated, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Milk, R	0.024 geo. mean	0.010-0.076	AAS, 0.002	Dortmund, West Germany, 1973-1974 (3)	Pfeilsticker and Markard, 1975
	Cheese, "Kaschcaval", R	0.024	0.050-0.100	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Cream, coffee, R	0.02	0.01-0.04	AAS, 0.01	Tokyo, Hyogo, and Hokkaido, Japan, [ ] (3)	Ikebe et al., 1977a
	Milk, O	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Powdered fullcream Guthrie, 1975
	Butter, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Cheese, process, R	0.015	0.050-0.104	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Milk, O	0.011	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Condensed Essing et al., 1969
	Cream, C	0.01		AAS, 0.01	U.K., 1971-1972 (1)	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Cheese, O	0.01	0.01	AAS, 0.01	Tokyo and Hyogo, Japan, [ ] (3)	Processed Ikebe et al., 1977a
	Milk, R	0.009	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Milk, O	0.009		AAS, 0.0002	Alsace, France, [ ] (1)	Powdered Laugel et al., 1976
	Milk, R	0.000047	0.000011-0.0004	AAS, 0.0002	Alsace, France, [ ] (12)	Laugel et al., 1976
	Milk, R	<0.25	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Cheese, twelve varieties, R	<0.04	0.01-0.11	AAS, 0.01	U.K., 1971-1972 (12)	Ministry of Agriculture, Fisheries and Food, 1973
	Butter, six types, R	<0.03	0.01-0.07	AAS, 0.01	U.K., 1971-1972 (10)	Ministry of Agriculture, Fisheries and Food, 1973
	Margarine, R	<0.02	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (3)	Ministry of Agriculture, Fisheries and Food, 1973
	Milk, evaporated and condensed, R	<0.01	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (5)	Ministry of Agriculture, Fisheries and Food, 1973
	Cream, R	<0.01	[ ]	AAS, 0.01	U.K., 1971-1972 (7)	Ministry of Agriculture, Fisheries and Food, 1973
	Butter, R	<0.01	0.01	AAS, 0.01	Hokkaido and Fukushima, Japan, [ ] (3)	Ikebe et al., 1977a

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
DAIRY PRODUCTS	Margarine, R	<0.01	0.01	AAS, 0.01	Tokyo and Hokkaido, Japan, [ ] (3)	Ikebe et al., 1977a
	Milk, R	<0.002	0.001-0.007	AAS, 0.001	U.K., 1972 (30)	Ministry of Agriculture, Fisheries and Food, 1973
	Milk, R	<0.0002	[ ]	P, 0.0002	Sweden, [ ] (98)	Jonsson, 1976
FRUITS	Current, black, R	0.074 geo. mean	0.055-0.098	AAS, 0.002	Dortmund, West Germany, 1973-1974 (5)	Authors' mean corrected from 0.047. Pfeilsticker and Markard, 1975
	Apple, R	0.07	[ ]	AAS, [ ]	Jena, GDR, [ ] (12)	Anke et al., 1976
	Current, red, R	0.054 geo. mean	0.036-0.101	AAS, 0.002	Dortmund, West Germany, 1973-1974 (3)	Pfeilsticker and Markard, 1975
	Cherry, sour, R	0.040 geo. mean	0.022-0.076	AAS, 0.002	Dortmund, West Germany, 1973-1974 (4)	Pfeilsticker and Markard, 1975
	Plum, R	0.036 geo. mean	0.014-0.067	AAS, 0.002	Dortmund, West Germany, 1973-1974 (7)	Pfeilsticker and Markard, 1975
	Strawberry, R	0.034 geo. mean	0.033-0.034	AAS, 0.002	Dortmund, West Germany, 1973-1974 (2)	Pfeilsticker and Markard, 1975
	Gooseberry, R	0.033 geo. mean	0.023-0.051	AAS, 0.002	Dortmund, West Germany, 1973-1974 (8)	Pfeilsticker and Markard, 1975
	Pear, whole, R	0.03	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (6)	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
FRUITS	Strawberry, R	0.03	0.02-0.07	AAS, 0.01	Nara and Tokushima, Japan, [ ] (5)	Tanaka et al., 1977
	Pear, whole, R	0.03	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (6)	Thomas et al., 1972
	Walnut, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Orange, R	0.029	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for eating Essing et al., 1969
	Rhubarb, R	0.025 geo. mean	0.010-0.057	AAS, 0.002	Dortmund, West Germany, 1973-1974 (9)	Pfeilsticker and Markard, 1975
	Pear, skin, R	0.02	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (11)	Ministry of Agriculture, Fisheries and Food, 1973
	Pear, flesh, R	0.02	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (11)	Ministry of Agriculture, Fisheries and Food, 1973
	Apple, C	0.02	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (6)	Ministry of Agriculture, Fisheries and Food, 1973
	Pear, with skin, Louise Bonne de Jersey, R	0.02		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Banana, Ecuador, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Apple, C	0.02	0.01-0.04	AAS, 0.01	U.K., [ ] (7)	Thomas et al., 1973
	Rhubarb, R	0.02	0.01-0.04	AAS, 0.01	U.K., [ ] (5)	Thomas et al., 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
FRUITS	Plum, R	0.014	[]	AAS, []	West Germany, [] ([])	Prepared for eating Essing et al., 1969
	Pear, R	0.012	[]	AAS, []	West Germany, [] ([])	Prepared for eating Essing et al., 1969
	Pear, R	0.011 geo. mean	0.010-0.013	AAS, 0.002	Dortmund, West Germany, 1973-1974 (3)	Pfeilsticker and Markard, 1975
	Banana, R	0.011	[]	AAS, []	West Germany, [] ([])	Prepared for eating Essing et al., 1969
	Peach, R	0.011	[]	AAS, []	West Germany, [] ([])	Prepared for eating Essing et al., 1969
	Apple, R	0.010 geo. mean	0.005-0.027	AAS, 0.002	Dortmund, West Germany, 1973-1974 (14)	Pfeilsticker and Markard, 1975
	Grapefruit, C	0.01	[]	AAS, 0.01	U.K., 1971-1972 (4)	Ministry of Agriculture, Fisheries and Food, 1973
	Lemon, R	0.01	0.01-0.04	AAS, 0.01	Japan, [] (5)	Tanaka et al., 1977
	Plum, with skin, Omega, R	0.01		AAS, []	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Apple, Golden Delicious, R	0.01		AAS, []	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Orange, R	0.01	[]	AAS, []	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Prune, C	0.01	0.01	AAS, 0.01	U.K., [] (6)	Thomas et al., 1973
	Plum, C	0.01	0.01	AAS, 0.01	U.K., [] (12)	Thomas et al., 1973
	Plum, R	0.01	0.01-0.04	AAS, 0.01	U.K., [] (6)	Thomas et al., 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
FRUITS	Current, black, C	0.01	0.01	AAS, 0.01	U.K., [ ] (4)	Thomas et al., 1973
	Pineapple, C	0.01	0.01-0.03	AAS, 0.01	U.K., [ ] (5)	Thomas et al., 1973
	Orange, C	0.01	0.01	AAS, 0.01	U.K., [ ] (3)	Thomas et al., 1973
	Peach, C	0.01	0.01	AAS, 0.01	U.K., [ ] (4)	Thomas et al., 1973
	Rhubarb, C	0.01	0.01	AAS, 0.01	U.K., [ ] (8)	Thomas et al., 1973
	Apple, R	0.009	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for eating Essing et al., 1969
	Citrine, R	0.008	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for eating Essing et al., 1969
	Grapes, R	0.007	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Apple, R	0.007	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Strawberry, R	0.006	0.0002-0.029	AAS, 0.0002	Sweden, [ ] (19)	Fuchs et al., 1976
	Raspberry, gooseberry, red and black currents, R	0.005	0.0002-0.024	AAS, 0.0002	Sweden, [ ] (5)	Fuchs et al., 1976
	Apple, Delicious, R	0.004	[ ]		Tohoku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Fruit, R	0.004	0.003-0.007	P, 0.25 ng Cd/ml	West Germany, (20)	Collet, 1975
	Fruit, mixed types, R	0.003	0.0002-0.029	AAS, 0.0002	Sweden, [ ] (>32)	Fuchs et al., 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
FRUITS	Peach, R	0.002	0.0002-0.006	AAS, 0.0002	Sweden, [ ] (4)	Fuchs et al., 1976
	Orange, R	0.002	[ ]		Kyushu, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Apple, Kogyoku, R	0.002	[ ]		Tohoku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Orange, R	0.002	0.0002-0.007	AAS, 0.0002	Sweden, [ ] (4)	Fuchs et al., 1976
	Fruit, R and O	0.00187	0.0002-0.0090	AAS, 0.0002	Alsace, France, [ ] (11)	Fresh and preserved Laugel et al., 1976
	Plum, R	0.001	0.0002-0.005	AAS, 0.0002	Sweden, [ ] (15)	Fuchs et al., 1976
	Cherry, R	0.000	0.0002-0.004	AAS, 0.0002	Sweden, [ ] (14)	Fuchs et al., 1976
	Apple, R	0.000	[ ]	AAS, 0.0002	Sweden, [ ] (17)	Fuchs et al., 1976
	Plum, R	<0.02	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (5)	Ministry of Agriculture, Fisheries and Food, 1973
	Fruits and preserves, O	<0.01	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (41)	Prepared for eating Ministry of Agriculture, Fisheries and Food, 1973
	Apricot, C	<0.01	[ ]	AAS, 0.01	U.K., 1971-1972 (3)	Ministry of Agriculture, Fisheries and Food, 1973
	Currant, black, C	<0.01	0.01	AAS, 0.01	U.K., 1971-1972 (4)	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
FRUITS	Damson, C	<0.01	0.01	AAS, 0.01	U.K., 1971-1972 (2)	Ministry of Agriculture, Fisheries and Food, 1973
	Orange (mandarin), C	<0.01	[]	AAS, 0.01	U.K., 1971-1972 (3)	Ministry of Agriculture, Fisheries and Food, 1973
	Peach, C	<0.01	[]	AAS, 0.01	U.K., 1971-1972 (4)	Ministry of Agriculture, Fisheries and Food, 1973
	Pineapple, C	<0.01	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (5)	Ministry of Agriculture, Fisheries and Food, 1973
	Plum, three varieties, C	<0.01	0.01	AAS, 0.01	U.K., 1971-1972 (11)	Ministry of Agriculture, Fisheries and Food, 1973
	Prune, C	<0.01	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (6)	Ministry of Agriculture, Fisheries and Food, 1973
	Rhubarb, C	<0.01	[]	AAS, 0.01	U.K., 1971-1972 (6)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Grapefruit, R	<0.01	0.01	AAS, 0.01	Japan, [] (3)	Imported from U.S. Tanaka et al., 1977
	Banana, R	<0.01	0.01	AAS, 0.01	Japan, [] (3)	Tanaka et al., 1977
	Apple, R	<0.01	0.01	AAS, 0.01	Japan, [] (3)	Tanaka et al., 1977

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
FRUITS	Peach, Golden Queen, R	<0.01		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Damson, C	<0.01	0.01	AAS, 0.01	U.K., [ ] (2)	Thomas et al., 1973
	Grapefruit, C	<0.01	0.01	AAS, 0.01	U.K., [ ] (4)	Thomas et al., 1973
	Apricot, C	<0.01	0.01	AAS, 0.01	U.K., [ ] (3)	Thomas et al., 1973
GARDEN FRUITS	Peppercorn, black, R	0.14	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Okra, R	0.08	0.04-0.11	AAS, 0.01	Kochi, Japan, [ ] (4)	Tanaka et al., 1977
	Peppercorn, white, R	0.06	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Tomato, sauce, C	0.044	0.010-0.080	Sp., 0.25 ug	Rumania, [ ] (8)	Rautu and Sporn, 1970
	Pepper, sweet, R	0.04	0.03-0.05	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Eggplant, R	0.03	0.02-0.04	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Tomato, R	0.03	0.02-0.04	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Tomato, O	0.03		AAS, 0.01	Aichi, Japan, [ ] (1)	Puree Tanaka et al., 1977
	Tomato, R	0.03	[ ]	AAS, [ ]	Jena, GDR, [ ] (12)	Anke et al., 1976
	Pepper, sweet, R	0.029	0.015-0.043	AAS, 0.0002	Sweden, [ ] (4)	Fuchs et al., 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GARDEN FRUITS	Tomato, R	0.02	0.01-0.08	AAS, 0.01	U.K., 1971-1972 (10)	Ministry of Agriculture, Fisheries and Food, 1973
	Catsup, tomato, F	0.02	0.01-0.03	AAS, 0.01	Aichi, Tokyo, and Osaka, Japan, [ ] (5)	Ikebe et al., 1977a
	Tomato, R	0.02	0.01-0.08	AAS, 0.01	U.K., 1971-1972 (10)	Thomas et al., 1972
	Tomato, R	0.02	0.01-0.08	AAS, 0.01	U.K., [ ] (10)	Thomas et al., 1973
	Tomato, R	0.015	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Tomato, R	0.013	<0.036	Sp., 0.25 ug	Rumania, [ ] (11)	Bautu and Sporn, 1970
	Cucumber, R	0.012	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Tomato, R	0.010	0.0002-0.030	AAS, 0.0002	Sweden, [ ] (26)	Fuchs et al., 1976
	Cucumber, R	0.01	0.01	AAS, 0.01	U.K., 1971-1972 (3)	Thomas et al., 1972
	Tomato, Blenheim, R	0.01		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Pumpkin, R	0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Tomato, C	0.01	0.01	AAS, 0.01	U.K., [ ] (4)	Thomas et al., 1973
	Tomato, O	0.0037	0.0004-0.0068	P, 0.25 ng Cd/ml	West Germany, 1974 (32)	Dried tomato soup. Data are for reconstituted product. Collet, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GARDEN FRUITS	Cucumber, R	0.003	0.0002-0.014	AAS, 0.0002	Sweden, [ ] (29)	Fuchs et al., 1976
	Tomato, C	<0.01	[ ]	AAS, 0.01	U.K., 1971-1972 (4)	Ministry of Agriculture, Fisheries and Food, 1973
	Cucumber, R	<0.01	0.01	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Pumpkin, R	<0.01	0.01	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Butternut, R	<0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Cucumber, R	<0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Marrow, R	<0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
GRAIN AND CEREAL	Wheat, O	0.34	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Germ Guthrie, 1975
	Cereals, ready-to-eat, O	0.20	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	All-bran Guthrie, 1975
	Cereals, ready-to-eat, O	0.20	[ ]	AAS, [ ]	New Zealand, 1971-1973 (3)	Farex Guthrie, 1975
	Wheat, O	0.160		Sp., 0.05 ug	Okayama, Japan, [ ] (1)	Flour Schroeder and Balassa, 1961
	Soybean, O	0.14	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Flour Guthrie, 1975
	Rice, polished, R	0.137		Sp., 0.05 ug	Yokote, Japan, [ ] (1)	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Rice, unpolished, R	0.13	[ ]	AAS, [ ]	Japan, [ ] (34)	Kjellstrom et al., 1977
	Rice, polished, R	0.125		Sp., 0.05 ug	Kurashiki, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Wheatgerm, R	0.12	0.10-0.13	AAS, 0.01	U.K., 1971-1972 (2)	Ministry of Agriculture, Fisheries and Food, 1973
	Wheat, O	0.12	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Bran Guthrie, 1975
	Rice, polished, R	0.106		Sp., 0.05 ug	Odate, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Buckwheat, R	0.10	0.06-0.14	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Rice, O	0.10	[ ]	AAS, [ ]	Japan, [ ] (34)	Polished Kjellstrom et al., 1977
	Rice, unpolished, R	0.088		Sp., 0.05 ug	Kojyo, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Wheat, Winter, R	0.087*	[ ]	AAS, [ ]	Sweden, 1974 ([ ])	Soil cont'd 0.022 ppm Cd. Fertilizer cont'd 9.90 ppm Cd. 150 kg N/ha + 30 kg P added per year. Andersson, 1976
	Wheat, grain, R	0.08 (dry basis)	0.01-0.23 (dry basis)	P, 0.01	West Germany, [ ] (42)	Mean recalculated to include all samples. Crossman and Egels, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Corn, C	0.08		AAS, 0.01	U.K., 1971-1972 (1)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Cereals, ready-to-eat, O	0.08	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Weetbix Guthrie, 1975
	Rice, polished, R	0.077		Sp., 0.05 ug	All areas of Japan, [ ] (204)	Schroeder and Balassa, 1961
	Wheat, Winter, R	0.076*	[ ]	AAS, [ ]	Sweden, 1974 ([ ])	Soil cont'd 0.022 ppm Cd. 150 kg N/ha added as NPK 16-5-12. Fertilizer cont'd 2.6 ppm Cd. Anderson, 1976
	Rice, unpolished, R	0.075	0.03-0.11		Toyama, Japan, 1967 (6)	Normal exposure Yamagata and Shigematsu, 1970
	Wheat, whole, R	0.072		Sp., 0.05 ug	Koiyo, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Wheat, Winter, R	0.071*	[ ]	AAS, [ ]	Sweden, 1974 ([ ])	Soil cont'd 0.022 ppm Cd; fertilizer contained 0.048 ppm Cd. 150 kg N/ha added per yr as Ca(NO3)2. Soil pH 6.4. [illegible]
	Flour, wholemeal, R	0.07	0.02-0.13	AAS, 0.01	U.K., 1971-1972 (6)	Ministry of Agriculture, Fisheries and Food, 1973
	Rice, C	0.07	0.04-0.13	AAS, 0.01	Nigata, Gifu, and Hyogo, Japan, [ ] (3)	Processed cake (Mochi) Ikebe et al., 1977a

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Corn, sweet, R	0.07	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Rice, polished, R	0.07	[ ]		All areas of Japan, [ ] ([ ])	Normal exposure Yamagata and Shigematsu, 1970
	Rye, O	0.07	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Flour Guthrie, 1975
	Wheat, Spring, grain, R	0.068*	0.018-0.136	AAS, <0.01	Sweden, 1916-1972 (35)	No significant concentration trend with time. 200 to 800 kg/ha superphosphate and 100-300 kg/ha calcium nitrate added annually. Phosphate fertilizer cont'd about 25 ug Cd/gm, wet wt. Kjellstrom et al., 1975
	Wheat, Winter, R	0.060	[ ]	AAS, [ ]	Sweden, 1974 ([ ])	No phosphate fertilizer added, but soil contained 0.022 ppm Cd. Soil pH was 6.5. Andersson, 1976
	Wheat, O	0.06	[ ]	AAS, [ ]	New Zealand, 1971-1973 (4)	Wholemeal (100% extraction) Guthrie, 1975
	Wheat, O	0.06	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Kibbled product Guthrie, 1975
	Wheat, whole, R	0.054		Sp., 0.05 ug	Matsubara, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Bread, black, R	0.054	0.050-0.165	Sp., 0.25 ug	Rumania, [ ] (9)	Pautu and Sporn, 1970

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Wheat, Spring, R	0.053	[ ]	AAS, 0.010	Uppsala, Sweden, 1971 (2)	Kjellstrom et al., 1974
	Wheat, Spring, R	0.052	0.050-0.053	AAS, 0.010	Maelar Valley, Sweden, 1971 (2)	Kjellstrom et al., 1974
	Barley, grain, R	0.05	0.01-0.75 (dry basis)	P, 0.01	West Germany, [ ] (60)	Authors' data recal'd to include all samples in mean. Crossman and Egels, 1975
	Corn, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Meal Guthrie, 1975
	Wheat, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Flour, patent white, 78% extraction Guthrie, 1975
	Rye, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Breadstuff Guthrie, 1975
	Breadstuff, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Brown, 60% wholemeal flour Guthrie, 1975
	Breadstuff, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Wholemeal, 100% extraction flour Guthrie, 1975
	Cereals, ready-to-eat, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Ricies Guthrie, 1975
	Cereals, to prepare, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Oatmeal, dry Guthrie, 1975
	Cereals, to prepare, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Rolled oats, dry Guthrie, 1975
	Wheat, O	0.047	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Flour Essing et al., 1969

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Bread, white, R	0.042	0.050-0.110	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Wheat, R	0.04	0.02-0.06	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Oats, grain, [ ]	0.04	[ ]	AAS, [ ]	Jena, GDR, [ ] (12)	Anke et al., 1976
	Rice, unpolished grain, R	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Barley, grain, R	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Barley, R	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Flour Guthrie, 1975
	Cereals, ready-to-eat, O	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Branettes Guthrie, 1975
	Rice, bran, R	0.039		Sp., 0.05 ug	Okayama, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Wheat, Fall, grain, R	0.035*	0.005-0.077	AAS, <0.01	Sweden, 1916-1972 (48)	Increasing Cd content with time attributed to contamination from air and fertilizers. 200 to 800 kg/ha superphosphate and 50-400 kg/ha calcium nitrate added yearly. Superphosphate cont'd about 25 ug Cd/g, wet wt. Kjellstrom et al., 1975
	Buckwheat, O	0.03 (dry basis)	0.01-0.06	AAS, 0.01	Nagano, Yamagata, and Mie, Japan, [ ] (3)	Ikebe et al., 1977a

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Bread, wholemeal, R	0.03	0.02-0.04	AAS, 0.01	U.K., 1971-1972 (7)	Ministry of Agriculture, Fisheries and Food, 1973
	Corn, F	0.03	0.01-0.08	AAS, 0.01	U.K., 1971-1972 (3)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Bread, white, R	0.03	0.02-0.04	AAS, 0.01	Osaka, Japan, [ ] (3)	Ikebe et al., 1977a
	Breadstuff, C	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	White, 78% extraction flour Guthrie, 1975
	Wheat, Fall, R	0.029	[ ]	AAS, 0.010	Uppsala, Sweden, 1970 (2)	Kjellstrom et al., 1974
	Rye, O	0.025	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Flour Essing et al., 1969
	Rice, R	0.023	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Bread, white, R	0.02	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (14)	Ministry of Agriculture, Fisheries and Food, 1973
	Rice, O	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Polished grain Guthrie, 1975
	Cereal, O	0.016	0.003-0.025	P, 0.25 ng Cd/ml	West Germany, 1974 (22)	Processed products Collet, 1975
	Oats, R	0.014	[ ]	AAS, 0.010	North Sweden, 1971 (9)	Kjellstrom et al., 1974
	Oats, R	0.011	[ ]	AAS, 0.010	South Sweden, 1971 (8)	Kjellstrom et al., 1974

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Rice, polished, R	0.010		Sp., 0.05 ug	Kojyo, Japan, [ ] (1)	Schroeder and Balassa, 1961
	Wheat, R	0.01-0.04	[ ]	AAS, [ ]	Australia, [ ] ([ ])	Miller et al., 1976
	Cereal, breakfast, [ ]	0.01-0.03	[ ]	AAS, [ ]	Australia, [ ] ([ ])	Miller et al., 1976
	Oats, grain, R	0.01 (dry basis)	0.01-0.28 (dry basis)	P, 0.01	West Germany, [ ] (67)	Authors' data recal'd to include all samples in mean. Crossman and Egels, 1975
	Corn, grain, R	0.01 (dry basis)	0.01-0.08 (dry basis)	P, 0.01	West Germany, [ ] (24)	Mean recalculated to include all samples. Crossman and Egels, 1975
	Barley, O	0.01		AAS, 0.01	Japan, [ ] (1)	Pressed Tanaka et al., 1977
	Barley, R	0.008	0.003-0.012	AAS, 0.010	Jorn, Sweden, [ ] (8)	Kjellstrom et al., 1974
	Cereals, breads, macaroni, R	0.0051	0.0002-0.0160	AAS, 0.0002	Alsace, France, [ ] (7)	Laugel et al., 1976
	Bread, white, R	[ ]	0.040-0.055		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Corn, O	<0.050	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Meal Rautu and Sporn, 1970
	Cereal, O	<0.03	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (41)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GRAIN AND CEREAL	Flour, white, R	<0.03	0.01-0.05	AAS, 0.01	U.K., 1971-1972 (9)	Ministry of Agriculture, Fisheries and Food, 1973
	Wheat, soft, O	<0.01	0.01	AAS, 0.01	Tokyo, Japan, [ ] (3)	Flour Tanaka et al., 1977
	Wheat, medium, O	<0.01	0.01	AAS, 0.01	Tokyo, Japan, [ ] (2)	Flour Tanaka et al., 1977
	Wheat, hard, O	<0.01	0.01	AAS, 0.01	Aichi and Tokyo, Japan, [ ] (3)	Flour Tanaka et al., 1977
	Rye, grain, R	<0.01	[ ]	P, 0.01	West Germany, [ ] (19)	Crossman and Egels, 1975
LEAFY VEGETABLES	Turnip, leaves, R	0.19	[ ]	AAS, [ ]	Jena, GDR, [ ] (12)	Anke et al., 1976
	Asparagus, C	0.16	0.15-0.18	AAS, 0.01	U.K., 1971-1972 (2)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Mushroom, C	0.11	0.03-0.19	AAS, 0.01	U.K., 1971-1972 (2)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Spinach, R	0.11	0.03-0.31	AAS, 0.01	Japan, [ ] (4)	Tanaka et al., 1977
	Spinach, R	0.095	[ ]		Kanto, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Lettuce, leaf, R	0.093 geo. mean	0.037-0.198	AAS, 0.002	Dortmund, West Germany, 1973-1974 (5)	Pfeilsticker and Markard, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Spinach, C	0.09	0.003-0.18	AAS, 0.003	U.K., 1971-1972 (7)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Celery, R	0.085	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for eating Essing et al., 1969
	Parsley, R	0.081 geo. mean	0.043-0.170	AAS, 0.002	Dortmund, West Germany, 1973-1974 (6)	Pfeilsticker and Markard, 1975
	Spinach, F	0.08	0.04-0.13	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Spinach, C	0.08	0.03-0.18	AAS, 0.01	U.K., [ ] (7)	Thomas et al., 1973
	Kohlrabi, R	0.08	[ ]	AAS, [ ]	Jena, GDR, [ ] (12)	Anke et al., 1976
	Leafy vegetables, mixed, R	0.07	0.05-0.1	AAS, 0.01	U.K., 1971-1972 (6)	Grown 8 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Spinach, R	0.064		Sp., 0.25 ug	Rumania, [ ] (1)	Rautu and Sporn, 1970
	Celery, R	0.064		AAS, 0.0002	Sweden, [ ] (1)	Fuchs et al., 1976
	Celery, R	0.06	0.01-0.22	AAS, 0.01	Shizuoka, Japan, [ ] (5)	Tanaka et al., 1977
	Spinach, R	0.059 geo. mean	0.055-0.063	AAS, 0.002	Dortmund, West Germany, 1973-1974 (2)	Authors' mean corrected from 0.039. Pfeilsticker and Markard, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Lettuce, head, F	0.054 geo. mean	0.031-0.147	AAS, 0.002	Dortmund, West Germany, 1973-1974 (9)	Pfeilsticker and Markard, 1975
	Cabbage, fresh, O	0.05	0.01-0.15	AAS, 0.01	U.K., 1971-1972 (23)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Broccoli, F	0.05	0.02-0.10	AAS, 0.01	U.K., 1971-1972 (3)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Brussels sprout, F	0.05	0.02-0.09	AAS, 0.01	U.K., 1971-1972 (3)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Rape, R	0.05	0.03-0.07	AAS, 0.01	Japan, [ ] (4)	Tanaka et al., 1977
	Brussels sprout, R	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Spinach, R	0.045	0.019-0.070	AAS, 0.0002	Sweden, [ ] (8)	Fuchs et al., 1976
	Lettuce, head, R	0.042	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for eating Essing et al., 1969
	Cabbage, red, R	0.040	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969
	Celery, R	0.04	0.01-0.05	AAS, 0.01	U.K., 1971-1972 (3)	Thomas et al., 1972
	Leek, R	0.04	0.02-0.09	AAS, 0.01	U.K., 1971-1972 (4)	Thomas et al., 1972
	Cabbage, R	0.04	0.01-0.15	AAS, 0.01	U.K., 1971-1972 (23)	Thomas et al., 1972
	Cabbage, white, R	0.033	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Cabbage, R	0.031 geo. mean.	0.022-0.094	AAS, 0.002	Dortmund, West Germany, 1973-1974 (9)	Pfeilsticker and Markard, 1975
	Kohlrabi, R	0.031	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969
	Brussels sprout, fresh, C	0.03	0.01-0.11	AAS, 0.01	U.K., 1971-1972 (16)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Lettuce, head, R	0.03	0.02-0.05	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Brussels sprout, R	0.03	0.01-0.11	AAS, 0.01	U.K., 1971-1972 (16)	Thomas et al., 1972
	Celery, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Lettuce, R	0.029	0.0002-0.060	AAS, 0.0002	Sweden, [ ] (26)	Fuchs et al., 1976
	Brussels sprout, R	0.027	0.017-0.036	AAS, 0.0002	Sweden, [ ] (4)	Fuchs et al., 1976
	Kohlrabi, R	0.026 geo. mean	0.010-0.071	AAS, 0.002	Dortmund, West Germany, 1973-1974 (14)	Pfeilsticker and Markard, 1975
	Cabbage, Chinese, R	0.022	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Mushroom, R	0.02	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (6)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Rhubarb, R	0.02	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (5)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Watercress, R	0.02	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (4)	Ministry of Agriculture, Fisheries and Food, 1973
	Asparagus, R	0.02	0.01-0.04	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Cabbage, Chinese, R	0.02	1.01-0.02	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Mushroom, R	0.02	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (3)	Thomas et al., 1972
	Watercress, R	0.02	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (6)	Thomas et al., 1972
	Cauliflower, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Spinach, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Lettuce, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Mushroom, R	0.016	0.005-0.046	AAS, 0.0002	Sweden, [ ] (12)	Fuchs et al., 1976
	Cabbage, R	0.012	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Cauliflower, R	0.010	0.003-0.021	AAS, 0.0002	Sweden, [ ] (12)	Fuchs et al., 1976
	Asparagus, boiled, C	0.01	0.01-0.02	AAS, 0.01	Hokkaido and Tokyo, Japan, [ ] (3)	Ikebe et al., 1977a
	Cauliflower, R	0.01	0.01	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Broccoli, R	0.01	0.01	AAS, 0.01	Mie, Japan, [ ] (5)	Tanaka et al., 1977

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Asparagus, R	0.01	[]	AAS, []	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Cabbage, green, R	0.01	[]	AAS, []	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Cabbage, R	0.004	0.0002-0.017	AAS, 0.0002	Sweden, [] (41)	Fuchs et al., 1976
	Asparagus, O	0.0026	0.0004-0.0059	P, 0.25 ng Cd/ml	West Germany, 1974 (32)	Dried asparagus soup. Data are for reconstituted product. Collet, 1975
	Cabbage, F	<0.05	[]	Sp, 0.25 ug	Rumania, [] (11)	Rautu and Sporn, 1970
	Vegetables, green, C	<0.01	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (41)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Cabbage, R	<0.01	0.01	AAS, 0.01	Japan, [] (3)	Tanaka et al., 1977
LEGUME VEGETABLES	Soybean (Kuromame), F	0.17	0.05-0.48	AAS, 0.01	Osaka and Hokkaido, Japan, [] (7)	Tanaka et al., 1977
	Soybean, O	0.10	0.06-0.13	AAS, 0.01	Nagano, Japan, [] (3)	Curd, congealed Ikebe et al., 1977a
	Peanut, R	0.08	0.04-0.11	AAS, 0.01	Japan, [] (3)	Tanaka et al., 1977
	Soybean, R	0.08	0.04-0.12	AAS, 0.01	Osaka and Hokkaido, Japan, [] (3)	Tanaka et al., 1977
	Bean, haricot, kidney, O	0.06	[]	AAS, []	New Zealand, 1971-1973 (2)	Dried Guthrie, 1975
	Lentil, brown, O	0.06	[]	AAS, []	New Zealand, 1971-1973 (2)	Dried Guthrie, 1975
	Pea, split, O	0.06	[]	AAS, []	New Zealand, 1971-1973 (2)	Dried Guthrie, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEGUME VEGETABLES	Soybean, O	0.05	0.02-0.09	AAS, 0.01	Nagano, Osaka and Kyoto, Japan, [ ] (3)	Paste (Shiro-miso) Ikebe et al., 1977a
	Pea, green, R	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Pea, R	0.042 (geo. mean)	0.019-0.075	AAS, 0.002	Dortmund, West Germany, 1973-1974 (12)	Pfeilsticker and Markard, 1975.
	Bean, green, F	0.04	0.01-0.10	AAS, 0.01	U.K., 1971-1972 (5)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Bean, kidney (Toramame), R	0.04	0.02-0.07	AAS, 0.01	Osaka, Japan, [ ] (3)	Tanaka et al., 1977
	Bean, kidney (Kintckimame), R	0.03	0.01-0.08	AAS, 0.01	Osaka, Japan, [ ] (5)	Tanaka et al., 1977
	Soybean, O	0.03	0.02-0.03	AAS, 0.01	Aichi, Nigata, and Tokyo, Japan, [ ] (3)	Paste (Aka-miso) Ikebe et al., 1977a
	Beans and peas, C	0.024	0.050-0.081	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Pea, F	0.02	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (6)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Soybean, O	0.02	0.02-0.02	AAS, 0.01	Osaka and Hyogo, Japan, [ ] (3)	Curd Ikebe et al., 1977a
	Pea, green, R	0.01	0.01-0.02	AAS, 0.01	Kyoto and Osaka, Japan, [ ] (3)	Ikebe et al., 1977a
	Pea, with pod (Sayaendo), R	0.01	0.01	Sp., 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Bean, green, French, R	0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEGUME VEGETABLES	Bean, yellow, butter, R	0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Beans, baked, C	0.01	0.01-0.03	AAS, 0.01	U.K., [ ] (7)	Thomas et al., 1973
	Bean, white, R	0.008	<0.050	Sp, 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Pea, R	0.004	0.003-0.005	AAS, 0.0002	Sweden, [ ] (5)	Fuchs et al., 1976
	Legume vegetables, C	0.00185 ug/ml	0.0002-0.0041 ug/ml	AAS, 0.0002	Alsace, France, [ ] (9)	Soup, with and without meat Laugel et al., 1976
	Pea, green, processed, [ ]	0.001	[ ]	AAS, [ ]	Australia, [ ] ([ ])	Miller et al., 1976
	Pea, C	0.07	0.05-0.09	AAS, 0.01	U.K., 1971-1972 (10)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Bean, broad, F	<0.04	0.01-0.10	AAS, 0.01	U.K., 1971-1972 (3)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Bean, C	<0.01	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (7)	Baked Ministry of Agriculture, Fisheries and Food, 1973
	Bean, kidney, with pod, R	<0.01	0.01	AAS, 0.01	Kochi, Japan, [ ] (5)	Tanaka et al., 1977
	Bean sprout, R	<0.01	0.01	AAS, 0.01	Osaka, Japan, [ ] (5)	Tanaka et al., 1977
MEAT, FISH, POULTRY	Oyster, R	35.0 (dry basis)	20-43 (dry basis)	ES, 20	Tasman Bay, New Zealand, [ ] (6)	Brooks and Rumsby, 1965

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCE
MEAT, FISH, POULTRY	Crab, dressed, contains brown meat, C	3.8	1.3-6.4	AAS, 0.01	U.K., 1971-1972 (2)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Scallop, P	249.0 (dry basis)	210-299 (dry basis)	ES, 20	Tasman Bay, New Zealand, [] (6)	Brooks and Rumsby, 1965
	Cuttlefish, liver (MONKO), O	110.0	[]		Africa, [] ([ ])	Dried Yamagata and Shigematsu, 1970
	Cuttlefish, liver (SURUME), O	94.0	[]		San-in, Japan, [] ([ ])	Dried Yamagata and Shigematsu, 1970
	Octopus, liver, P	25.0	[]		Hokuriku, Japan, [] ([ ])	Yamagata and Shigematsu, 1970
	Oyster (OSTREA ANGASI Sowerby), P	10.7		AAS, 0.05	Tasmanian waters, 1972-1973 (1)	Eustace, 1974
	Cod (TRISOPTERUS MINUTUS), R	8.5 (dry basis)	[]		Oldbury-on-Severn, U.K., 1973 (100)	Whole fish Hardisty et al., 1974
	Elk, kidney, P	8.05		AAS, []	Porvoo, Finland, 1965 (1)	Jaakkola et al., 1972
	Oyster (OSTREA LUTARIA), P	6.43	[]	AAS, []	Foveaux Strait, New Zealand, [] (14-20)	High cadmium concentration thought to occur naturally since industrial pollution is absent from immediate area. Nielsen, 1975
	Crab, O	6.4	2.5-8.6	Sp., []	U.K., [] (6)	Crabmeat raw, dark body and mixed Reynolds and Reynolds, 1971

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENT, REFERENCE
MEAT, FISH, POULTRY	Whiting (MERLANGUS MERLANGUS), R	[illegible].2 (dry basis)	[]		Oldbury-on-Severn, U.K., 1973 (117)	Whole fish Hardisty et al., 1974
	Crab, whole, hens (CANCER PAGURUS L.), R	5.8	2.1-9.7	Sp., []	U.K., [] (27)	Edible portions Reynolds and Reynolds, 1971
	Flounder (PLATICHTHYES FLESUS), R	5.6 (dry basis)	[]		Oldbury-on-Severn, U.K., 1973 (250)	Whole fish Hardisty et al., 1974
	Eel, liver (ANGUILLA ANGUILLA), R	5.020 (dry basis)	0.002-10.4 (dry basis)	AAS, 0.002	U.K., [] (12)	Pomeril and Davis, 1976
	Crab, whole, cocks (CANCER PAGURUS L.), R	4.4	0.17-8.4	Sp., []	U.K., [] (9)	Edible portions Reynolds and Reynolds, 1971
	Oyster (CRASSOSTREA GIGAS), R	3.7 (dry basis)	[]	AAS, []	South Africa, [] (57)	Watling and Watling, 1976
	Shrimp (CRANGON VULGARIS), whole, R	3.50	[]	AAS, []	U.K., NE Coast, 1972-1973 (4)	No known contamination sources Wright, 1976
	Oyster (OSTREA EDULIS), R	3.1 (dry basis)	[]	AAS, []	South Africa, [] (56)	Watling and Watling, 1976
	Crab, C	3.1	1.0-5.2	Sp., []	U.K., [] (6)	Dressed crabmeat Reynolds and Reynolds, 1971
	Mullet, grey (LIZA RAMADA), R	3.0 (dry basis)	[]		Oldbury-on-Severn, U.K., 1973 (100)	Whole fish Hardisty et al., 1974
	Prawn (LEANDER SERRATUS), whole, R	2.80	[]	AAS, []	U.K., NE Coast, 1972-1973 (3)	No known contamination sources Wright, 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENT, REFERENCES
MEAT, FISH, POULTRY	Mutton, kidney, R	2.8	[ ]	AAS, [ ]	Bitterfeld, GDR, [ ] (25)	Site of chemical industry Anke et al., 1976
	Oyster (CRASSOSTREA MARGARITACEA), R	2.5 (dry basis)	[ ]	AAS, [ ]	South Africa, [ ] (50)	Watling and Watling, 1976
	Crab, C	1.7	0.5-4.0	Sp., [ ]	U.K., [ ] (5)	Crab pastes and spreads Reynolds and Reynolds, 1971
	Elk, liver, R	1.50		AAS, [ ]	Porvoo, Finland, 1968 (1)	Jaakkola et al., 1972
	Crab, C	1.4	1.2-1.7	AAS, 0.01	U.K., 1971-1972 (2)	Paste Ministry of Agriculture, Fisheries and Food, 1973
	Mutton, kidney, R	1.4	[ ]	AAS, [ ]	Merseburg, DR, [ ] (25)	Site of chemical industry Anke et al., 1976
	Bonito, O	1.14	[ ]		Kanto, Japan, [ ] ([ ])	Processed food Yamagata and Shigematsu, 1970
	Lobster, mixed claw and tail meat, C	1.1	0.97-1.3	AAS, 0.01	U.K., 1971-1972 (2)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Clam, short-necked (TSUKUDANI), C	0.84	[ ]		Shikoku, Japan, [ ] ([ ])	Processed food Yamagata and Shigematsu, 1970
	Clam, short-necked (TSUKUDANI), C	0.81	[ ]		Kansai, Japan, [ ] ([ ])	Processed food Yamagata and Shigematsu, 1970
	Pork, kidney, R	0.721	0.141-2.088	P, 0.25 ug Cd/ml	West Germany, 1974 (16)	Koller, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENT, REFERENCE
MEAT, FISH, POULTRY	Cod, artic, liver (BOREOGADUS SAIDA), R	0.72 (dry basis)	0.35-1.6 (dry basis)	AAS, [ ]	Baffin Island, 1974,1975 (15)	Bohn and McElroy, 1976
	Mutton, liver, R	0.72	[ ]	AAS, [ ]	Bitterfeld, [ ] (35)	Site of chemical industry Anke et al., 1976
	Cod, artic (BOREOGADUS SAIDA), R	0.62 (dry basis)	0.26-1.5 (dry basis)	AAS, [ ]	Baffin Island, 1974,1975 (47)	Whole fish Bohn and McElroy, 1976
	Elk, flesh, R	0.59		AAS, [ ]	Porvoo, Finland, 1965 (3)	Jaakkola et al., 1973
	Chicken, liver, R	0.53	[ ]		Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Mutton, liver, R	0.51	[ ]	AAS, [ ]	Merseburg, GDR, [ ] (35)	Site of chemical industry Anke et al., 1976
	Beef, kidney, O	0.50	0.22-0.77	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for [illegible] Ministry of Agriculture, Fisheries and Food, 1973
	Pork, liver, R	0.482	0.041-1.72	AAS, 0.0002	Alsace, France, [ ] (6)	Laugel et al., 1976
	Beef, kidney, R	0.475	0.040-0.770	AAS, 0.005	Augsburg, West Germany, 1974 (11)	Kreuzer et al., 1977
	Beef, kidney, R	0.443	0.150-1.410	AAS, 0.005	Augsburg, West Germany, 1972 (22)	Kreuzer et al., 1977
	Kidney, type unspecified, C	0.432	0.050-0.762	Sp., 0.25 ug	Rumania, [ ] (9)	Rauta and Dinu, 1972
	Beef, kidney, R	0.428	0.070-1.090	AAS, 0.005	Augsburg, West Germany, 1972 (19)	Kreuzer et al., 1977
	Beef, kidney, [ ]	0.4-1.2	[ ]	AAS, [ ]	Australia, [ ] ([ ])	Miller et al., 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Beef, kidney, R	0.370	0.140-0.670	AAS, 0.005	Augsburg, West Germany, 1972 (12)	Kreuzer et al., 1975
	Crab (CANCER PAGURUS), whole, R	0.36	[]	AAS, []	U.K., NE coast, 1972-1973 (3)	No known contamination sources Wright, 1976
	Pike, kidney (ESOX LUCIUS L.), R	0.339		AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Eel, muscle (ANGUILLA ANGUILLA), F	0.336 (dry basis)	0.002-1.19 (dry basis)	AAS, 0.002	U.K., [] (12)	Bometil and Davis, 1976
	Pike, kidney (ESOX LUCIUS L.), R	0.308		AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Pike, kidney (ESOX LUCIUS L.), R	0.295		AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Beef, kidney, R	0.290	0.110-0.662	AAS, 0.0002	Alsace, France, [] (4)	Laugel et al., 1976
	Oyster, R	0.28	0.23-0.32	AAS, 0.01	Japan, [] (7)	Ikebe et al., 1977b
	Beef, kidney, R	0.278	0.060-1.660	AAS, 0.005	Augsburg, West Germany, 1972 (17)	Kreuzer et al., 1975
	Lamb, kidney, O	0.27	0.02-0.71	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Turkey, liver, F	0.261	0.013-0.405	P, [illegible] ng Cd/ml	West Germany, 1974 (7)	Collet, 1975
	Beef, kidney, R	0.251	0.038-0.525	AAS, 0.005	Augsburg, West Germany, 1973 (17)	Kreuzer et al., 1975
	Beef, kidney, R	0.251	[]	AAS, 0.005	Augsburg, West Germany, 1974 (9)	Kreuzer et al., 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS, REFERENCES
MEAT, FISH, POULTRY	Beef, kidney, R	0.250	0.060-0.750	AAS, 0.005	Augsburg, West Germany, 1973 (19)	Kreuzer et al., 1975
	Anchovy (STOLEPHORUS sp.), R	0.25	[]	AAS, []	Thailand, Bayon area, 1972 (35)	Husschenbeth and Harms, 1975
	Oyster, cultured (CRASSOSTREA GIGAS), R	0.25	[]	AAS, []	Taiwan coastal waters, 1973 (30)	Jeng and Huang, 1973
	Pork, kidney, O	0.24	0.01-0.59	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Pike, kidney (ESOX LUCIUS L.), R	0.232		AAS, []	Gulf of Finland, Tvarminne, 1970 (3)	Jaakkola et al., 1973
	Squid, R	0.22	0.01-0.63	AAS, 0.01	East China Sea, [] (24)	Ikebe et al., 1977b
	Beef, liver, R	0.22	[]		Santo, Japan, [] ([ ])	Yamagata and Shigematsu, 1970
	Beef, kidney, R	0.22	0.17-0.27	AAS, []	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Oyster, cultured (CRASSOSTREA GIGAS), R	0.22	[]	AAS, []	Taiwan coastal waters, 1973 (30)	Jeng and Huang, 1973
	Oyster, cultured (CRASSOSTREA GIGAS), R	0.21	[]	AAS, []	Taiwan coastal waters, 1973 (30)	Jeng and Huang, 1973
	Oyster, cultured (CRASSOSTREA GIGAS), R	0.21	[]	AAS, []	Taiwan coastal waters, 1973 (40)	Jeng and Huang, 1973
	Oyster (CRASSOSTREA COMMERCIALIS), R	0.2	0.1-1.0	AAS, 0.05	Australia, 1973 ([illegible])	Mackay et al., 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Mackerel, C	0.19	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Oyster, Bluff, C	0.19	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Fish, P	0.182	0.028-0.664	AAS, 0.0002	Alsace, France, [ ] (7)	Laugel et al., 1976
	Sardine, C	0.18	0.10-0.30	AAS, 0.01	U.K., 1971-1972 (17)	Ministry of Agriculture, Fisheries and Food, 1973
	Cod, fillets, R	0.18		AAS, [ ]	North Sea, 1970 (1)	Portmann, 1972
	Cuttlefish (MONKO), O	0.18	[ ]		Africa, [ ] ([ ])	Dried Yamagata and Shigematsu, 1972
	Beef, kidney, R	0.173	0.060-0.840	AAS, 0.005	Augsburg, West Germany, 1973 (16)	Kreuzer et al., 1975
	Pork, kidney, R	0.172	0.144-0.200	AAS, 0.0002	Alsace, France, [ ] (2)	Laugel et al., 1976
	Pike, kidney (ESOX LUCIUS L.), R	0.169		AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1972
	Bream, red-spot threadfin (NEMIPTERUS PERONII), R	0.15	[ ]		Thailand, Inner Gulf, 1972 (4)	Huschenbeth and Harms, 1975
	Clam, short-neck, R	0.13	0.03-0.23	AAS, 0.01	Japan, [ ] (5)	Ikebe et al., 1977b
	Prawn, Tiger (PENAEUS MONODON), R	0.13	[ ]	AAS, [ ]	Thailand, Pavong area, 1972 (4)	Huschenbeth and Harms, 1975
	Pork, kidney, R	0.13	0.07-0.18	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Mutton, liver, R	0.13	0.09-0.16	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Fish, C	0.126	0.027-0.444	AAS, 0.0002	Alsace, France, [ ] (12)	Preserved Laugel et al., 1976
	Crab, C	0.123		Sp., 0.05 ug	Japan, [ ] (1)	Schroeder and Balassa, 1961
	Crab, C	0.123		Sp., 0.05 ug	Japan, [ ] (1)	Schroeder and Balassa, 1961
	Clam, hen, R	0.12		AAS, 0.01	Japan, [ ] (1)	Ikebe et al., 1977b
	Plaice, fillets, R	0.12		AAS, [ ]	North Sea, 1970 (1)	Fortmann, 1972
	Cod, fillets, R	0.12	[ ]	AAS, [ ]	U.K. coastal waters, 1970 (7)	Fortmann, 1972
	Cuttlefish (SURUME), O	0.12	[ ]		San-in, Japan, [ ] ([ ])	Dried Yamagata and Shigematsu, 1970
	Pike, liver (ESOX LUCIUS L.), R	0.113		AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1972 (1)	Jaakkola et al., 1973
	Sardine, C	0.112		Sp., 0.05 ug	Norway, [ ] (1)	Schroeder and Balassa, 1961
	Skipjack, O	0.11	0.10-0.11	AAS, 0.01	Ehime and Hyogo, Japan, [ ] (3)	Dried strips Ikebe et al., 1977a
	Cod (GADUS MORRHUA), muscle, R	0.11	[ ]	AAS, [ ]	U.S., NE Coast, 1972-1973 (6)	No known contamination sources Wright, 1976
	Sausage, R	0.107	0.005-0.910	AAS, 0.0002	Alsace, France, [ ] (24)	Laugel et al., 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Beef, t-bone, R	0.10	[]	AAS, []	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Pork, C	0.10	[]	AAS, []	New Zealand, 1971-1973 (2)	Bacon Guthrie, 1975
	Sardine (SARDINA PILCHARDUS), R	0.1	0.09-0.11	AAS, []	Northern Adriatic Sea, 1972-1973 (6)	Gilmartin and Revelante, 1975
	Anchovy (ENGRAULIS ENCRASICHOLUS), R	0.1	0.09-0.20	AAS, []	Northern Adriatic Sea, 1972-1973 (6)	Gilmartin and Revelante, 1975
	Beef, liver, R	0.099	0.026-0.300	AAS, 0.005	Augsburg, West Germany, 1972 (22)	Kreuzer et al., 1975
	Pike, liver (ESOX LUCIUS L.), R	0.096		AAS, []	Gulf of Botnnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Beef (heifer), liver, R	0.095	0.081-0.120	AAS, 0.0002	Alsace, France, [] (3)	Laugel et al., 1976
	Shellfish, R	0.091	0.0025-0.430	AAS, 0.0002	Alsace, France, [] (21)	Laugel et al., 1976
	Crab, clawmeat and other white meat, C	0.09	0.05-0.15	Sp., []	U.K., [] (6)	Reynolds and Reynolds, 1971
	Beef, C	0.09	[]	AAS, []	New Zealand, 1971-1973 (2)	Sausage Guthrie, 1975
	Mutton, kidney, R	0.09	0.04-0.13	AAS, []	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Beef, liver, R	0.09	0.09	AAS, []	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Beef, liver, R	0.083	0.016-0.133	P, 0.25 ng Cd/ml	West Germany, 1974 (8)	Collet, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENT, REFERENCE
MEAT, FISH, POULTRY	Pork, liver, R	0.080	[]		Hokuriku, Japan, [] ([ ])	Yamagata and Shigematsu, 1970
	Meat pie, steak and kidney, C	0.08	0.04-0.12	AAS, 0.01	U.K., 1971-1972 (2)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Fish, commercial species, R	0.08	0.02-0.17	AAS, []	Med. Coast, Israel, 1974 (190)	Edible muscle analyzed. Roth and Hornung, 1977
	Beef, liver, R	0.078	0.030-0.200	AAS, 0.005	Augsburg, West Germany, 1972 (19)	Kreuzer et al., 1975
	Beef, liver, R	0.075	0.020-0.170	AAS, 0.005	Augsburg, West Germany, 1972 (11)	Kreuzer et al., 1975
	Fish, with tomato sauce, C	0.074	0.050-0.263	Sp., 0.25 ug	Rumania, [] (17)	Fautu and Sporn, 1975
	Beef, liver, R	0.070	[]	AAS, 0.005	Augsburg, West Germany, 1974 (9)	Kreuzer et al., 1975
	Pike, liver (ESOX LUCIUS L.), R	0.070		AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Pork, liver, R	0.070	0.016-0.133	P, 0.25 ng Cd/ml	West Germany, 1974 (9)	Collet, 1974
	Plaice, fillets, R	0.07	[]	AAS, []	U.K. coastal waters, 1970 (13)	Portmann, 1972
	Beef, O	0.07	[]	AAS, []	New Zealand, 1971-1973 (2)	Corned, silverside Guthrie, 1975
	Pork, O	0.07	[]	AAS, []	New Zealand, 1971-1973 (2)	Sausage Guthrie, 1975
	Cod, blue, O	0.07		AAS, []	New Zealand, 1971-1973 (1)	Smoked Guthrie, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Cod, blue, R	0.07		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Beef, liver, R	0.068	0.030-0.190	AAS, 0.025	Augsburg, West Germany, 1972 (12)	Kreuzer et al., 1975
	Rabbit, liver, R	0.068		AAS, 0.0002	Alsace, France, [ ] (7)	Laugel et al., 1976
	Fish, with oil, C	0.066	0.050-0.210	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Beef, [ ]	0.060	0.050-0.110	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Chicken, liver, R	0.06		AAS, 0.01	U.K., 1971-1972 (1)	Ministry of Agriculture, Fisheries and Food, 1973
	Mackerel, C	0.06	0.02-0.12	AAS, 0.01	Tokyo, Japan, [ ] (3)	Ikebe et al., 1977a
	Pork, O	0.06	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Ham Guthrie, 1975
	Sole, fillets, R	0.06		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Calf, liver, R	0.059	0.013-0.176	P, 0.25 ng Cd/ml	West Germany, 1974 (9)	Collet, 1975
	Veal, R	0.057	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969
	Veal, liver, R	0.055	0.028-0.076	AAS, 0.0002	Alsace, France, [ ] (4)	Laugel et al., 1976
	Pike, liver (ESOX LUCIUS L.), R	0.055		AAS, [ ]	Gulf of Finland, Tvarminne, 1970 (1)	Jaakkola et al., 1973
	Chicken, R	0.052	[ ]		Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENT (REFERENCE)
MEAT, FISH, POULTRY	Beef, R	0.052	[]		Japan, [] (1)	Yamagata and Shigematsu, 1970
	Pomfret, black (PARASTROMATEUS NIGER), R	0.051	[]	AAS, []	Bangkok Area, Thailand, 1973 (5)	Huschenbeth and Harms, 1975
	Beef, liver, R	0.05	0.01-0.11	AAS, 0.01	U.K., 1971-1972 (4)	Ministry of Agriculture, Fisheries and Food, 1973
	Skipjack, seasoned, C	0.05		AAS, 0.01	Tokyo, Japan, [] (7)	Ikebe et al., 1973a
	Chicken, liver, R	0.05	0.01-0.08	AAS, 0.01	Japan, [] (4)	Ikebe et al., 1973b
	Plaice, fillets, R	0.05	[]	AAS, []	Western district from U.K., 1972 (2)	Portmann, 1972
	Chicken, dark meat, R	0.05	[]	AAS, []	New Zealand, 1973-1974 (1)	Guthrie, 1975
	Fish, Lemon, []	0.05		AAS, []	New Zealand, 1973-1974 (3)	Guthrie, 1975
	Tuna, yellowfin (THUNNUS ALBACORES), C	0.047	0.030-0.139	AAS, []	Pacific, Costa Rica, 1973 (10)	Zook et al., 1976
	Shrimp, Asian (unknown species), O	0.046	0.018-0.074	AAS, []	India, Thailand, Philippines, [] (10)	Samples were commercially peeled and deveined tails. Zook et al., 1976
	Beef, liver, R	0.045	0.011-0.094	AAS, 0.005	Augsburg, West Germany, 1974 (17)	Kreuzer et al., 1975
	Cod, Atlantic (GADUS MORHUA), R	0.043	0.000-0.114	AAS, []	Icelandic waters, [] (10)	Zook et al., 1976
	Beef, liver, R	0.042	0.012-0.104	AAS, 0.005	Augsburg, West Germany, 1973 (14)	Kreuzer et al., 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Rabbit, kidney, R	0.042		AAS, 0.0002	Alsace, France, [ ] (1)	Laugel et al., 1976
	Beef, liver, R	0.040	0.005-0.086	AAS, 0.005	Augsburg, West Germany, 1972 (17)	Kreuzer et al., 1975
	Shrimp, Mexican, unknown species, O	0.040	0.000-0.097	AAS, [ ]	Gulf of California, [ ] (10)	Sample partly packer's product Zook et al., 1976
	Lizardfish (SAURIDA ELONGATA), R	0.04	[ ]	AAS, [ ]	Thailand, Rayong area, 1972 (5)	Huschenbeth and Harms, 1975
	Pork, chops, R	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Egg, hen, whole, R	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Eel, with skin, [ ]	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (5)	Guthrie, 1975
	Veal, kidney, R	0.04		AAS, 0.0002	Alsace, France, [ ] (1)	Laugel et al., 1976
	Fish, 13 species, R	0.039	0.000-0.204	AAS, [ ]	Carinthian lakes, Austria, [ ] (95)	Weiser, 1975
	Beef, liver, R	0.038	0.010-0.084	AAS, 0.005	Augsburg, West Germany, 1973 (16)	Kreuzer et al., 1975
	Pork, [ ]	0.035	0.050-0.075	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Pike, liver (ESOX LUCIUS L.), R	0.034		AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Pork, R	0.032	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Pork, O	0.032		AAS, 0.0002	Alsace, France, [ ] (1)	Ham Laugel et al., 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Lizardfish (SYNODUS SIMILIS), R	0.030	[ ]	AAS, [ ]	Thailand, Inner Gulf, 1972 (6)	Huschenbeth and Harms, 1975
	Pork, O	0.03	0.02-0.05	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Beef, O	0.03	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (8)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Pork, O	0.03	0.02-0.03	AAS, 0.01	Osaka or Aichi, Japan, [ ] (3)	Ham Ikebe et al., 1977a
	Pork, O	0.03	0.01-0.09	AAS, 0.01	Aichi and Osaka, Japan, [ ] (3)	Smoked bacon Ikebe et al., 1977a
	Beef, O	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Minced steak Guthrie, 1975
	Chicken, white meat, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Mutton, chops, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Pork, loin, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Cod, red, R	0.03		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Ling fish, [ ]	0.03		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Meat, O	0.03	0.01-0.07	AAS, 0.01	Canada, [ ] (20)	Bologna Kirkpatrick and Coffin, 1973
	Pork, O	0.03	0.01-0.06	AAS, 0.01	Canada, [ ] (23)	Ham Kirkpatrick and Coffin, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Meat, miscellaneous, O	0.03	0.01-0.09	AAS, 0.01	Canada, [ ] (15)	Pastrami, smoked meats, dried uncooked ham, etc. Kirkpatrick and Coffin, 1973
	Beef, R	0.028	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Egg, R	0.028	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Pike, kidney (ESOX LUCIUS L.), R	0.028		AAS, [ ]	Gulf of Finland, Tammisaari, 1970 (1)	Jaakkola et al., 1973
	Cod, R	0.027	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Meat, C	0.027	0.050-0.100	Sp., 0.25 ug	Rumania, [ ] (14)	Rautu and Sporn, 1970
	Fish, marine, R	0.022	0.005-0.045	AAS, 0.0002	Alsace, France, [ ] (8)	Laugel et al., 1976
	Egg, hen, R	0.022	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Chicken, O	0.02	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (2)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Lamb, O	0.02	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Lamb, liver, O	0.02	0.01-0.06	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Chicken, C	0.02		AAS, 0.01	U.K., 1971-1972 (1)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Crab, red, R	0.02		AAS, 0.01	Japan, [ ] (1)	Ikebe et al., 1977b
	Beef, chuck, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Beef, sirloin, roasting, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Veal, topside, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Egg, hen, yolk, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Groper, [ ]	0.02		AAS, [ ]	New Zealand, 1971-1973 (1)	Guthrie, 1975
	Meat, ready-to-eat, C	0.02	0.01-0.22	AAS, 0.01	Canada, [ ] (15)	Kirkpatrick and Coffin, 1973
	Meat, C	0.02	0.01-0.05	AAS, 0.01	Canada, [ ] (25)	Salami Kirkpatrick and Coffin, 1973
	Meat, all types, C, R or O	0.02	0.01-0.22	AAS, 0.01	Canada, [ ] (190)	Kirkpatrick and Coffin, 1973
	Meat, C	0.02	0.01-0.04	AAS, 0.01	Canada, [ ] (20)	Processed luncheon meat Kirkpatrick and Coffin, 1973
	Fish, mixed species, muscle tissue, R	0.02	0.00-0.10	AAS, [ ]	Taiwan, 1973 ([ ])	Jeng and Huang, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Beef, O	0.02	0.01-0.08	AAS, 0.01	Canada, [ ] (23)	Corned Kirkpatrick and Coffin, 1973
	Meat, O	0.019	0.050-0.083	Sp., 0.25 ug	Rumania, [ ] (10)	Cold cuts Rautu and Sporn, 1970
	Pork, R	0.018	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969
	Anchovy, C	0.017		Sp., 0.05 ug	Portugal, [ ] (1)	Schroeder and Balassa, 1961
	Snapper, R	0.016 geo. mean	0.012-0.019	AAS, [ ]	New Zealand coastal waters, 1973 (70)	Edible muscle analyzed. (Authors' upper range limit corrected from 0.19). Brooks and Rumsey, 1974
	Chicken, liver, R	0.016	0.008-0.020	P, 0.25 ng Cd/ml	West Germany, 1974 (6)	Collet, 1975
	Herring, R	0.016	0.004-0.033	AAS, [ ]	Langesund, Norway, 1970-1971 (6)	Fish muscle analyzed Havre et al., 1973
	Fish, Gurnard, R	0.015 geo. mean	0.008-0.024	AAS, [ ]	New Zealand coastal waters, 1973 (70)	Edible muscle analyzed. Brooks and Rumsey, 1974
	Bream, sea, R	0.015	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Scurel, R	0.015	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Fish, C	0.015	0.008-0.050	P, 0.25 ng Cd/ml	West Germany, 1974 (16)	Collet, 1975
	Meat, C	0.014	0.005-0.018	P, 0.25 ng Cd/ml	West Germany, 1974 (4)	Collet, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Fish, R	0.014	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969
	Whiting, R	0.014	0.002-0.030	AAS, [ ]	Langesund, Norway, 1970-1971 (6)	Fish muscle analyzed Havre et al., 1973
	Pike, flesh (ESOX LUCIUS L.), R	0.013		AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Meat, C	0.012	0.008-0.020	P, 0.25 ng Cd/ml	West Germany, 1974 (7)	Sausage products Collet, 1975
	Fish, Trevally, R	0.010 geo. mean	0.006-0.012	AAS, [ ]	New Zealand coastal waters, 1973 (70)	Edible muscle analyzed. Brooks and Rumsey, 1974
	Rabbit, liver, R	0.01		AAS, 0.01	U.K., 1971-1972 (1)	Ministry of Agriculture, Fisheries and Food, 1973
	Cod, fillets, P	0.01		AAS, 0.01	U.K., 1971-1972 (1)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Salmon, pink, boiled, C	0.01	0.01	AAS, 0.01	Tokyo, Japan, [ ] (2)	Ikebe et al., 1977a
	Salmon, boiled, C	0.01		AAS, 0.01	Tokyo, Japan, [ ] (1)	Ikebe et al., 1977a
	Chicken, mature, R	0.01	0.01-0.04	AAS, 0.01	Japan, [ ] (5)	Ikebe et al., 1977b
	Beef, liver, R	0.01	0.01-0.04	AAS, 0.01	Japan, [ ] (5)	Ikebe et al., 1977b
	Beef, R	0.01	0.01-0.04	AAS, 0.01	Japan, [ ] (5)	Ikebe et al., 1977b
	Flounder, R	0.01	0.01-0.02	AAS, 0.01	Northern Atlantic Ocean, [ ] (3)	Ikebe et al., 1977b

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Seabream, red (Tai), R	0.01	0.01-0.02	AAS, 0.01	Nagasaki, Japan, [ ] (7)	Ikebe et al., 1977b
	Rockfish, black, R	0.01	0.01	AAS, 0.01	Nigata, Miyazaki, and Hokuriku, Japan, [ ] (8)	Ikebe et al., 1977b
	Mackerel, R	0.01	0.01-0.02	AAS, 0.01	Shizuoka, Japan, [ ] (12)	Ikebe et al., 1977b
	Sardine, R	0.01	0.01-0.04	AAS, 0.01	Chiba and Wakayama, Japan, [ ] (12)	Ikebe et al., 1977b
	Mackerel, R	0.01	0.01-0.03	AAS, 0.01	Nagasaki, Japan, [ ] (14)	Ikebe et al., 1977b
	Fish, O	0.01	0.01	AAS, 0.01	Kochi, Tokyo, and Hyogo, Japan, [ ] (3)	Rolled cake Ikebe et al., 1977a
	Fish, O	0.01	0.01	AAS, 0.01	Osaka, Toyama, and Niigata, Japan, [ ] (3)	Paste, boiled Ikebe et al., 1977a
	Egg, hen, R	0.01	0.01-0.03	AAS, 0.01	Canada, [ ] (100)	No differences observed among different regions of country. Kirkpatrick and Coffin, 1975
	Prawn, Green Tiger (PENAEUS SEMISULCATUS), R	0.01	[ ]	AAS, [ ]	Thailand, Rayong area, 1972 (4)	Huschenbeth and Harms, 1975
	Lamb, chops, R	0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Meat, C	0.01	0.01-0.04	AAS, 0.01	Canada, [ ] (17)	Smoked and unsmoked weiners Kirkpatrick and Coffin, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Ponyfish (LEIOGNATHUS EQUULUS), R	0.007	[ ]	AAS, [ ]	Thailand, Songhkla area, 1972 (10)	Huschenbeth and Harms, 1975
	Fish, Tarakihi, R	0.006 geo. mean	0.002-0.015	AAS, [ ]	New Zealand coastal waters, 1973 (68)	Edible muscle analyzed. Brooks and Rumsey, 1974
	Kingfish, R	0.006 geo. mean	0.002-0.014	AAS, [ ]	New Zealand coastal waters, 1973 (70)	Edible muscle analyzed. Brooks and Rumsey, 1974
	Cod, R	0.006	0.003-0.012	AAS, [ ]	Langesund, Norway, 1970-1971 (7)	Fish muscle analyzed Havre et al., 1973
	Fish, Moki, R	0.005 geo. mean	0.001-0.012	AAS, [ ]	New Zealand coastal waters, 1973 (70)	Edible muscle analyzed. Brooks and Rumsey, 1974
	Fish, Hapuku, R	0.005 geo. mean	0.001-0.011	AAS, [ ]	New Zealand coastal waters, 1973 (70)	Edible muscle analyzed. Brooks and Rumsey, 1974
	Pike, flesh (ESOX LUCIUS L.), R	0.005		AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Pike, flesh (ESOX LUCIUS L.), R	0.004	0.003-0.004	AAS, [ ]	Gulf of Finland, Huttinen, Finland, 1968 (2)	Jaakkala et al., 1973
	Pike, flesh (ESOX LUCIUS L.), R	0.004	0.003-0.004	AAS, [ ]	Gulf of Finland, Porkkala, Finland, 1968 (2)	Jaakkala et al., 1973
	Pike, flesh (ESOX LUCIUS L.), R	0.004		AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Pike, flesh (ESOX LUCIUS L.), R	0.004		AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970 (1)	Jaakkola et al., 1973
	Pike, R	0.004	0.001-0.008	AAS, [ ]	Largesund, Norway, 1970-1971 (3)	Fish muscle analyzed. Havre et al., 1973
	Oxtail, O	0.0037	0.0004-0.0061	P, 0.25 ng Cd/ml	West Germany, 1974 (43)	Dried oxtail soup. Data are for reconstituted product. Collet, 1975
	Catfish, seawater (TACHYSURUS sp.), R	0.003	[ ]	AAS, [ ]	Thailand, Songhkla area, 1972 (3)	Huschenbeth and Harms, 1975
	Pike, liver (ESOX LUCIUM L.), R	0.003		AAS, [ ]	Gulf of Finland, Tammisaari, 1970 (1)	Jaakkola et al., 1973
	Pike (ESOX LUCIUS L.), R	0.003		AAS, [ ]	Gulf of Finland, Tvarminne, 1970 (1)	Flesh analyzed Jaakkola et al., 1973
	Fish, Kahawai, R	0.002 geo. mean	0.002-0.003	AAS, [ ]	New Zealand coastal waters, 1973 (70)	Edible muscle analyzed. Brooks and Rumsey, 1974
	Pike (ESOX LUCIUS L.), R	0.002		AAS, [ ]	Gulf of Finland, Tammisaari, 1970 (1)	Flesh analyzed Jaakkola et al., 1973
	Cod, offshore, R	[ ]	0.002-0.018	AAS, 0.0001	German Bight, 1972-1974 (19)	Muscle analyzed Harms, 1975
	Plaice, offshore, R	[ ]	0.002-0.017	AAS, 0.0001	German Bight, 1972-1974 (17)	Harms, 1975
	Plaice, onshore, R	[ ]	0.004-0.073	AAS, 0.0001	German Bight, 1972-1974 (21)	Harms, 1975
	Crab, R	[ ]	0.076-0.14		San-in, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Mussel, R	<010.0 (dry basis)	[ ]	ES, 20	Tasman Bay, New Zealand, [ ] (6)	Brooks and Rumsby, 1965
	Oyster, [ ]	<2.0-19.8	[ ]	AAS, [ ]	Tasmania, [ ] ([ ])	Miller et al., 1976
	Seafood, [ ]	<0.1-3.0	[ ]	AAS, [ ]	Australia, [ ] ([ ])	Miller et al., 1976
	Lobster, claw meat, C	<0.1	[ ]	AAS, 0.01	U.K., 1971-1972 (3)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Lobster, tail meat, C	<0.1		AAS, 0.01	U.K., 1971-1972 (1)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Herring, O	<0.050	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Smoked Rautu and Sporn, 1970
	Herring, O	<0.050	[ ]	Sp., 0.25 ug	Rumania, [ ] (10)	Salted Rautu and Sporn, 1970
	Oyster, [ ]	<0.05-0.85	[ ]	AAS, [ ]	Australia, [ ] ([ ])	Miller et al., 1976
	Fish, [ ]	<0.05-0.15	[ ]	AAS, [ ]	Australia, [ ] ([ ])	Miller et al., 1976
	Cod, artic (BOREOGADUS SAIDA), O	<0.05 (dry basis)	[ ]	AAS, [ ]	Baffin Island, 1974-1975 (7)	Fillet Bohn and McElroy, 1976
	Pork, liver, O	<0.05	0.01-0.11	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Cod, fillets, R	<0.05	[ ]	AAS, [ ]	Waters distant from U.K., 1970 (2)	Portmann, 1972

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Trout, brown, fillets (SALMO TRUTTA), R	<0.05		AAS, 0.05	Tasmanian waters, 1972-1973 (1)	Eustace, 1974
	Squid (NOTODARIUS GOULDI), R	<0.05	[ ]	AAS, 0.05	Tasmanian waters, 1972-1973 (2)	Eustace, 1974
	Meat and fish, O	<0.02	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (41)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Fish, O	<0.02	0.01-0.06	AAS, 0.01	U.K., 1971-1972 (40)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Duck, liver, R	<0.01		AAS, 0.01	U.K., 1971-1972 (1)	Ministry of Agriculture, Fisheries and Food, 1973
	Egg, R	<0.01	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (10)	Ministry of Agriculture, Fisheries and Food, 1973
	Crab, white meat, C	<0.01		AAS, 0.01	U.K., 1971-1972 (1)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Whale meat, R	<0.01	0.01	AAS, 0.01	Japan, [ ] (3)	Ikebe et al., 1977b
	Pork, R	<0.01	0.01	AAS, 0.01	Japan, [ ] (3)	Ikebe et al., 1977b
	Pollack (Tara), R	<0.01	0.01	AAS, 0.01	Northern Ocean, [ ] (3)	Ikebe et al., 1977b
	Smelt, sweet, R	<0.01	0.01	AAS, 0.01	Japan, [ ] (5)	Ikebe et al., 1977b

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Mackerel, Spanish, R	<0.01	0.01	AAS, 0.01	Korea, [ ] (5)	Ikebe et al., 1977b
	Tuna, R	<0.01	0.01-0.03	AAS, 0.01	Japan, [ ] (7)	Ikebe et al., 1977b
	Octopus, R	<0.01	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Pork, O	<0.01	0.01-0.06	AAS, 0.01	Canada, [ ] (18)	Bacon Kirkpatrick and Coffin, 1973
	Beef, flesh, R	<0.005	[ ]	AAS, 0.005	Augsburg, West Germany, 1972 (141)	Kreuzer et al., 1975
	Beef, pork, veal, [ ]	<0.0002	[ ]	AAS, 0.0002	Alsace, France, [ ] (3)	Laugel et al., 1976
	Pork, brain, R	<0.0002		AAS, 0.0002	Alsace, France, [ ] (1)	Laugel et al., 1976
OILS, FATS, SHORTENING	Peanut butter, R	0.08	0.02-0.18	AAS, 0.01	Tokyo, Osaki, and Ibaragi, Japan, [ ] (3)	Ikebe et al., 1977a
	Lard, two types, R	0.03	0.02-0.04	AAS, 0.01	U.K., 1971-1972 (2)	Ministry of Agriculture, Fisheries and Food, 1973
	Mayonnaise, R	0.01	0.01-0.02	AAS, 0.01	Tokyo, Japan, [ ] (2)	Ikebe et al., 1977a
	Oil, olive, R	0.008	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Oil and fat, R	0.0026	0.0015-0.0036	AAS, 0.0002	Alsace, France, [ ] (4)	Laugel et al., 1976
	Fat, R	<0.03	0.01-0.25	AAS, 0.01	U.K., 1971-1972 (41)	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
OILS, FATS, SHORTENING	Oil, cooking, three types, R	<0.03	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (3)	Ministry of Agriculture, Fisheries and Food, 1973
	Oil, R	<0.010	[ ]	Sp, 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Oil, peanut, R	<0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Oil, sunflower, R	<0.01	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
OTHER	Herbs, six types, O	0.79	0.02-3.1	AAS, 0.01	U.K., 1971-1972 (15)	Dried Ministry of Agriculture, Fisheries and Food, 1973
	Thyme, R	0.27	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Horseradish powder, R	0.22	0.16-0.30	AAS, 0.01	Osaka and Tokyo, Japan, [ ] (3)	Ikebe et al., 1977a
	Sage, R	0.18	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Mustard, powder, R	0.16	0.16-0.16	AAS, 0.01	Osaka and Tokyo, Japan, [ ] (2)	Ikebe et al., 1977a
	Clove, R	0.11	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Burdock, great edible, R	0.09	0.03-0.20	AAS, 0.01	Tokushima and Ibaragi, Japan, [ ] (5)	Tanaka et al., 1977
	Baby food, apricot and rice, C	0.080	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Snodin, 1973
	Baby food, honey, O	0.060	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Bottled Snodin, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
OTHER	Baby food, vegetables with chicken, O	0.055	[]	AAS, 0.02 ug	U.K., [ ] ([ ])	Bottled Snodin, 1973
	Baby food, vegetables with beef, C	0.040	[]	AAS, 0.02 ug	U.K., [ ] ([ ])	Snodin, 1973
	Ginger root, R	0.04	0.01-0.06	AAS, 0.01	Kochi and Tokushima, Japan, [ ] (3)	Tanaka et al., 1977
	Herbs, C	0.04	0.02-0.06	AAS, 0.01	U.K., 1971-1972 (6)	Dried Thomas et al., 1972
	Vegetables, mixed, F	0.04	0.01-0.13	AAS, 0.01	U.K., 1971-1972 (27)	Thomas et al., 1972
	Baby food, C	0.036	[]	AAS, 0.02 ug	U.K., [ ] (7)	Snodin, 1973
	Baby food, cereal, O	0.035	[]	AAS, 0.02 ug	U.K., [ ] (15)	Dried Snodin, 1973
	Baby food, chocolate pudding, C	0.030	[]	AAS, 0.02 ug	U.K., [ ] ([ ])	Snodin, 1973
	Baby food, beef dinner, C	0.030	[]	AAS, 0.02 ug	U.K., [ ] ([ ])	Snodin, 1973
	Mustard, O	0.03		AAS, 0.01	Nara, Japan, [ ] (1)	Prepared Ikebe et al., 1977a
	Baby food, O	0.0296	0.0028-0.0490	AAS, 0.0002	Alsace, France, [ ] (7)	Prepared milk product Laugel et al., 1976
	Baby food, O	0.026	[]	AAS, 0.02 ug	U.K., [ ] (7)	Bottled Snodin, 1973
	Baby food, egg custard and rice, O	0.025	[]	AAS, 0.02 ug	U.K., [ ] ([ ])	Bottled Snodin, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
OTHER	Baby food, apples, O	0.025	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Bottled Snodin, 1973
	Baby food, apple dessert, C	0.020	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Snodin, 1973
	Baby food, milk, O	0.020	[ ]	AAS, 0.02 ug	U.K., [ ] (8)	Dried Snodin, 1973
	Soy sauce (Usukuchi shoyu), R	0.02	0.01-0.04	AAS, 0.01	Chiba and Hyogo, Japan, [ ] (2)	Ikebe et al., 1977a
	Soy sauce (Koikuchi shoyu), R	0.02	0.02-0.02	AAS, 0.01	Osaka, Kagawa, and Chiba, Japan, [ ] (3)	Ikebe et al., 1977a
	Vegetables, R	0.019	0.005-0.079	P, 0.25 ng Cd/ml	West Germany, 1974 (12)	Collet, 1975
	Vegetables, green, mixed types, R	0.013	0.0002-0.070	AAS, 0.0002	Sweden, [ ] (160)	Fuchs et al., 1976
	Baby food, chicken casserole with vegetable., C	0.010	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Snodin, 1973
	Baby food, roast chicken with bacon, O	0.010	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Bottled Snodin, 1973
	Baby food, roast turkey with bacon, O	0.010	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Bottled Snodin, 1973
	Curry roux, R	0.01	0.01	AAS, 0.01	Nara, Osaka, and Tokyo, Japan, [ ] (3)	Ikebe et al., 1977a
	Soy sauce (Tamari shoyu), R	0.01	0.01-0.03	AAS, 0.01	Aichi, Osaka, and Tokushima, Japan, [ ] (3)	Ikebe et al., 1977a

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
OTHER	Worcestershire sauce, R	0.01	0.01-0.04	AAS, 0.01	Aichi, Chiba, and Tokyo, Japan, [ ] (3)	Ikebe et al., 1977a
	Baby food, O	0.0031	0.0002-0.0276	AAS, 0.0002	Alsace, France, [ ] (18)	Bottled Laugel et al., 1976
	Vegetables, mixed, C	0.007	0.003-0.038	P, 0.25 ng Cd/ml	West Germany, 1974 (34)	Collet, 1975
	Vegetables, O	0.0060	0.0002-0.0375	AAS, 0.0002	Alsace, France, [ ] (27)	Fresh and preserved Laugel et al., 1976
	Baby food, vegetables and liver, O	0.005	[ ]	AAS, 0.02 ug	U.K., [ ] ([ ])	Dried product. Assays refer to reconstituted food. Snodin, 1973
	Mustard, R	0.0037	0.0034-0.0040	AAS, 0.0002	Alsace, France, [ ] (2)	Laugel et al., 1976
	Baby food, O	0.003	[ ]	AAS, 0.02 ug	U.K., [ ] (2)	Dried milk product. Assay refers to reconstituted food. Snodin, 1973
	Baby food, vegetables and lamb, O	0.003	[ ]	AAS, 0.02 ug	U.K., [ ] (2)	Dried product. Assay refers to reconstituted food. Snodin, 1973
	Spices, R	0.0007	0.0002-0.0016	AAS, 0.0002	Alsace, France, [ ] (3)	Laugel et al., 1976
	Baby food, O	[ ]	0.001-0.004	AAS, 0.02 ug	U.K., [ ] (4)	Dried milk product. Assay refers to reconstituted food. Snodin, 1973
	Baby food, O	<0.03	0.01-0.07	AAS, 0.01	U.K., 1971-1972 (16)	Dried Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
OTHER	Baby food, cereals, O	<0.02	0.01-0.05	AAS, 0.01	U.K., 1971-1972 (5)	Dried Ministry of Agriculture, Fisheries and Food, 1973
	Baby food, milk, O	<0.01	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (6)	Dried Ministry of Agriculture, Fisheries and Food, 1973
	Baby food, O	<0.01	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (23)	Bottled Ministry of Agriculture, Fisheries and Food, 1973
	Sauces, five types, R	<0.01	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (6)	Ministry of Agriculture, Fisheries and Food, 1973
	Baby food, C	<0.01	0.01-0.04	AAS, 0.01	U.K., 1971-1972 (55)	Ministry of Agriculture, Fisheries and Food, 1973
ROOT VEGETABLES	Taro, young, R	0.13	0.04-0.30	AAS, 0.01	Osaka and Tokushima, Japan, [ ] (5)	Tanaka et al., 1977
	Radish, root, Japanese, O	0.13	0.11-0.16	AAS, 0.01	Osaka, Japan, [ ] (3)	Chopped, dried Tanaka et al., 1977
	Carrot, R	0.13	0.09-0.22	AAS, 0.01	U.K., 1971-1972 (8)	Thomas et al., 1972
	Carrot, R	0.09	0.03-0.22	AAS, 0.01	U.K., 1971-1972 (14)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Potato, R	0.08	0.01-0.17	AAS, 0.01	U.K., 1971-1972 (19)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Potato, R	0.08	0.01-0.17	AAS, 0.01	U.K., 1971-1972 (19)	Thomas et al., 1972
	Onion, R	0.08	[ ]	AAS, [ ]	Jena, GDR, [ ] (12)	Anke et al., 1976
	Carrot, R	0.07	0.03-0.10	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Garlic, Chinese, R	0.07	0.02-0.16	AAS, 0.01	Hokkaido and Oita, Japan, [ ] (3)	Tanaka et al., 1977
	Onion, R	0.07	0.03-0.14	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Parsnip, R	0.057	0.016-0.111	AAS, 0.0002	Sweden, [ ] (5)	Fuchs et al., 1976
	Carrot, R	0.050	[ ]		Chubu, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Vegetables, root, mixed, R	0.05	[ ]	AAS, 0.01	U.K., 1972 (2)	Grown 8 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Rutabaga, R	0.05	0.01-0.08	AAS, 0.01	U.K., 1971-1972 (8)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Rutabaga, R	0.05	0.01-0.08	AAS, 0.01	U.K., 1971-1972 (8)	Thomas et al., 1972
	Carrot, R	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Beet, silver, R	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Radish, R	0.044	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Potato, R	0.041	[ ]		Hokkaido, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Beet, root, R	0.041	0.012-0.069	AAS, 0.0002	Sweden, [ ] (12)	Fuchs et al., 1976
	Carrot, R	0.041	0.003-0.160	AAS, 0.0002	Sweden, [ ] (44)	Fuchs et al., 1976
	Leek, fresh, O	0.04	0.02-0.09	AAS, 0.01	U.K., 1971-1972 (4)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Onion, R	0.04	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (11)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Yam, R	0.04	0.03-0.05	AAS, 0.01	Aichi and Ibaragi, Japan, [ ] (5)	Tanaka et al., 1977
	Onion, R	0.04	0.01-0.09	AAS, 0.01	U.K., 1971-1972 (11)	Thomas et al., 1972
	Potato, new, white, R	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Parsnip, R	0.04	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Potato, R	0.04	[ ]	AAS, [ ]	Jena, GDR, [ ] (12)	Anke et al., 1976
	Potato, R	0.039	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969
	Carrot, R	0.038 geo. mean	0.016-0.089	AAS, 0.002	Dortmund, West Germany, 1973-1974 (14)	Pfeilsticker and Markard, 1975
	Vegetables, root, mixed, R	0.038	0.003-0.111	AAS, 0.0002	Sweden, [ ] (75)	Fuchs et al., 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Carrot, R	0.032	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Prepared for cooking Essing et al., 1969
	Onion, Welsh, R	0.03	0.02-0.06	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Turnip, R	0.03	0.01-0.08	AAS, 0.01	Tokushima and Hyogo, Japan, [ ] (5)	Tanaka et al., 1977
	Turnip, white, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Rhubarb, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Potato, new, Red King, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Onion, mature, white, R	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Onion, R	0.027 geo. mean	0.018-0.040	AAS, 0.002	Dortmund, West Germany, 1973-1974 (2)	Pfeilsticker and Markard, 1975
	Leek, R	0.025	0.010-0.050	AAS, 0.0002	Sweden, [ ] (5)	Fuchs et al., 1976
	Potato, R	0.02	0.01-0.03	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
	Radish, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Turnip, swede, yellow, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Onion, long, R	0.018	[ ]		Hokuriku, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Radish, R	0.017	[ ]		Hokkaido, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Onion, R	0.017	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Potato, R	0.017	0.050-0.057	Sp., 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Radish, R	0.016 geo. mean	0.011-0.027	AAS, 0.002	Dortmund, West Germany, 1973-1974 (6)	Pfeilsticker and Markard, 1975
	Rutabaga, R	0.016	0.010-0.026	AAS, 0.0002	Sweden, [ ] (13)	Fuchs et al., 1976
	Potato, R	0.016	0.005-0.055	AAS, 0.0002	Sweden, [ ] (60)	Fuchs et al., 1976
	Onion, R	0.011	0.0002-0.036	AAS, 0.0002	Sweden, [ ] (21)	Fuchs et al., 1976
	Shallot, R	0.01	0.01-0.02	AAS, 0.01	Hiroshima, Japan, [ ] (5)	Tanaka et al., 1977
	Potato, sweet, R	0.01	0.01-0.02	AAS, 0.01	Shizuoka, Japan, [ ] (5)	Tanaka et al., 1977
	Radish, R	0.008		AAS, 0.0002	Sweden, [ ] (1)	Fuchs et al., 1976
	Onion, R	0.009	[ ]	Sp., 0.25 ug	Rumania, [ ] (2)	Rautu and Sporn, 1970
	Onion, R	0.003	[ ]		Hokkaido, Japan, [ ] ([ ])	Yamagata and Shigematsu, 1970
	Carrot, R	<0.05	[ ]	Sp., 0.25 ug	Rumania, [ ] (2)	Rautu and Sporn, 1970
	Vegetables, root, O	<0.02	0.01-0.07	AAS, 0.01	U.K., 1971-1972 (41)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Carrot, C	<0.01	0.01-0.02	AAS, 0.01	U.K., 1971-1972 (10)	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	Radish, root, Japanese, P	<0.01	0.01	AAS, 0.01	Japan, [ ] (3)	Tanaka et al., 1977
SUGARS AND ADJUNCTS	Honey, R	0.06	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Sugar, O	0.05	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Refined Guthrie, 1975
	Sugar, O	0.03	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Brown Guthrie, 1975
	Salt, R	0.023	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Sugar, O	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Demerara Guthrie, 1975
	Sugar, R	0.02	[ ]	AAS, [ ]	New Zealand, 1971-1973 (2)	Guthrie, 1975
	Jam, strawberry, R	0.01	0.01	AAS, 0.01	Tokyo, Kochi, and Hiroshima, Japan, [ ] (3)	Ikebe et al., 1977a
	Marmalade, P	0.007	[ ]	Sp, 0.25 ug	Rumania, [ ] (10)	Rautu and Sporn, 1970
	Honey, R	0.0055	0.0002-0.011	AAS, 0.0002	Alsace, France, [ ] (2)	Laugel et al., 1976
	Sugar, R	0.005	[ ]	AAS, [ ]	West Germany, [ ] ([ ])	Essing et al., 1969
	Sugar, R	0.0016		AAS, 0.0002	Alsace, France, [ ] (1)	Laugel et al., 1976
	Vinegar, R	0.0007	0.0004-0.0011	AAS, 0.0002	Alsace, France, [ ] (5)	Laugel et al., 1976

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
SUGARS AND ADJUNCTS	Jellies, seven flavors, R	<0.03	0.01-0.10	AAS, 0.01	U.K., 1971-1972 (7)	Ministry of Agriculture, Fisheries and Food, 1973
	Sugar, six types, R	<0.02	0.01-0.03	AAS, 0.01	U.K., 1971-1972 (6)	Ministry of Agriculture, Fisheries and Food, 1973
	Sweets and chocolates, various, R	<0.02	0.01-0.07	AAS, 0.01	U.K., 1971-1972 (11)	Ministry of Agriculture, Fisheries and Food, 1973
	Sugar, O	<0.01	0.01	AAS, 0.01	Osaka, Tokyo, and Hyogo, Japan, [ ] (6)	Coarse, crystal Ikebe et al., 1977a
	Marmalade, orange, R	<0.01	<0.01	AAS, 0.01	Tokyo, Hokkaido, and Hiroshima, Japan, [ ] (3)	Ikebe et al., 1977a
	Vinegar, fruits, R	<0.01	0.01	AAS, 0.01	Osaka and Saitama, Japan, [ ] (3)	Ikebe et al., 1977a
	Vinegar, rice, R	<0.01	0.01	AAS, 0.01	Oita, Aichi, and Osaka, Japan, [ ] (3)	Ikebe et al., 1977a
	Sugar, black, R	<0.01	0.01	AAS, 0.01	Osaka and Tokyo, Japan, [ ] (5)	Ikebe et al., 1977a
	Honey, R	<0.01	0.01	AAS, 0.01	Tokyo and Nara, Japan, [ ] (3)	Ikebe et al., 1977a
	Sugar, C	<0.01	0.01	AAS, 0.01	Osaka, Japan, [ ] (6)	Candy Ikebe et al., 1977a
	Sugar, O	<0.01	0.01	AAS, 0.01	Hyogo, Tokyo, and Mie, Japan, [ ] (6)	Cube Ikebe et al., 1977a
	Sugar, O	<0.01	0.01	AAS, 0.01	Tokyo, Osaka, and Kanagawa, Japan, [ ] (6)	Granulated Ikebe et al., 1977a

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
SUGARS AND ADJUNCTS	Sugar, 0	<0.01	0.01	AAS, 0.01	Tokyo, Osaka, Kanagawa, and Hyogo, Japan, [ ] (5)	Superior white Ikebe et al., 1977a

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Anchovy, C	0.017		1	Sp., 0.05 ug	Portugal, [ ]	Schroeder and Balassa, 1961
Anchovy (ENGRAULIS ENCRASICHOLUS), R	0.1	0.09-0.20	5	AAS, [ ]	Northern Adriatic Sea, 1972-1973	Gilmartin and Revelante, 1975
Anchovy (STOLEPHORUS sp.), R	0.25	[ ]	15	AAS, [ ]	Thailand, Rayong area, 1972	Huschenbeth and Harms, 1975
Apple, C	0.02	0.01-0.04	6	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	0.02	0.01-0.04	7	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Apple, R	0.07	[ ]	12	AAS, [ ]	Jena, GDR, [ ]	Anke et al., 1976
	0.010 geo. mean	0.005-0.027	14	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.009	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for eating Essing et al., 1969
	0.007	[ ]	10	Sp., 0.25 ug	Rumania, [ ]	Fautu and Sporn, 1970
	0.000	[ ]	17	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	<0.01	0.01	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Apple, Delicious, R	0.004	[ ]	[ ]		Tohoku, Japan, [ ]	Yamagata and Shigematsu, 1970
Apple, Golden Delicious, R	0.01		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

BLANK PAGE

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Apple, Kogyoku, R	0.002	[]	[]		Tohoku, Japan, []	Yamagata and Shigematsu, 1970
Apricot, C	<0.01	[]	3	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	<0.01	0.01	3	AAS, 0.01	U.K., []	Thomas et al., 1973
Asparagus, C	0.16	0.15-0.18	2	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Asparagus, O	0.0026	0.0004-0.0053	32	P, 0.25 ng Cd/ml	West Germany, 1974	Dried asparagus soup. Data are for reconstituted product. Collet, 1975
Asparagus, R	0.02	0.01-0.04	3	AAS, 0.01	Japan, []	Tanaka et al., 1977
	0.01	[]	2	AAS, []	New Zealand, 1971-1973	Guthrie, 1975
Asparagus, boiled, C	0.01	0.01-0.02	3	AAS, 0.01	Hokkaido and Tokyo, Japan, []	Ikebe et al., 1977a
Baby food, C	0.036	[]	7	AAS, 0.02 ug	U.K., []	Snodin, 1973
	<0.01	0.01-0.04	55	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Baby food, O	0.0296	0.0028-0.0490	7	AAS, 0.0002	Alsace, France, []	Prepared milk product Laugel et al., 1976
	0.026	[]	7	AAS, 0.02 ug	U.K., []	Bottled Snodin, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Baby food, O	0.0081	0.0002-0.0275	18	AAS, 0.0002	Alsace, France, [ ]	Bottled Laugel et al., 1976
	0.003	[ ]	2	AAS, 0.02 ug	U.K., [ ]	Dried milk product. Assay refers to reconstituted food. Snodin, 1973
	[ ]	0.001-0.004	4	AAS, 0.02 ug	U.K., [ ]	Dried milk product. Assay refers to reconstituted food. Snodin, 1973
	<0.03	0.01-0.07	15	AAS, 0.01	U.K., 1971-1972	Dried Ministry of Agriculture, Fisheries and Food, 1973
	<0.01	0.01-0.02	23	AAS, 0.01	U.K., 1971-1972	Bottled Ministry of Agriculture, Fisheries and Food, 1973
Baby food, apple dessert, C	0.020	[ ]	[ ]	AAS, 0.02 ug	U.K., [ ]	Snodin, 1973
Baby food, apples, O	0.025	[ ]	[ ]	AAS, 0.02 ug	U.K., [ ]	Bottled Snodin, 1973
Baby food, apricot and rice, C	0.080	[ ]	[ ]	AAS, 0.02 ug	U.K., [ ]	Snodin, 1973
Baby food, beef dinner, C	0.030	[ ]	[ ]	AAS, 0.02 ug	U.K., [ ]	Snodin, 1973
Baby food, cereal, O	0.035	[ ]	15	AAS, 0.02 ug	U.K., [ ]	Dried Snodin, 1973
Baby food, cereals, O	<0.02	0.01-0.05	5	AAS, 0.01	U.K., 1971-1972	Dried Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Baby food, chicken casserole with vegetable., C	0.010	[]	[]	AAS, 0.02 ug	U.K., []	Snodin, 1973
Baby food, chocolate pudding, C	0.030	[]	[]	AAS, 0.02 ug	U.K., []	Snodin, 1973
Baby food, egg custard and rice, O	0.025	[]	[]	AAS, 0.02 ug	U.K., []	Bottled Snodin, 1973
Baby food, honey, O	0.060	[]	[]	AAS, 0.02 ug	U.K., []	Bottled Snodin, 1973
Baby food, milk, O	0.020	[]	8	AAS, 0.02 ug	U.K., []	Dried Snodin, 1973
	<0.01	0.01-0.03	6	AAS, 0.01	U.K., 1971-1972	Dried Ministry of Agriculture, Fisheries and Food, 1973
Baby food, roast chicken with bacon, O	0.010	[]	[]	AAS, 0.02 ug	U.K., []	Bottled Snodin, 1973
Baby food, roast turkey with bacon, O	0.010	[]	[]	AAS, 0.02 ug	U.K., []	Bottled Snodin, 1973
Baby food, vegetables and lamb, O	0.033	[]	2	AAS, 0.02 ug	U.K., []	Dried product. Assay refers to reconstituted food. Snodin, 1973
Baby food, vegetables and liver, O	0.005	[]	[]	AAS, 0.02 ug	U.K., []	Dried product. Assays refer to reconstituted food. Snodin, 1973
Baby food, vegetables with beef, C	0.040	[]	[]	AAS, 0.02 ug	U.K., []	Snodin, 1973
Baby food, vegetables with chicken, O	0.055	[]	[]	AAS, 0.02 ug	U.K., []	Bottled Snodin, 1973
Banana, R	0.011	[]	[]	AAS, []	West Germany, []	Prepared for eating Essing et al., 1969

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Banana, P	<0.01	0.01	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Banana, Equador, P	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Barley, D	0.01		1	AAS, 0.01	Japan, [ ]	Pressed Tanaka et al., 1977
Barley, R	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Flour Guthrie, 1975
	0.008	0.003-0.012	9	AAS, 0.010	Jorn, Sweden, [ ]	Kjellstrom et al., 1974
Barley, grain, R	0.05	0.01-0.75 (dry basis)	60	P, 0.01	West Germany, [ ]	Authors' data recalc'd to include all samples in mean. Crossman and Egels, 1975
	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Bean, O	<0.01	0.01-0.03	7	AAS, 0.01	U.K., 1971-1972	Baked Ministry of Agriculture, Fisheries and Food, 1973
Bean sprout, R	<0.01	0.01	5	AAS, 0.01	Osaka, Japan, [ ]	Tanaka et al., 1977
Bean, broad, F	<0.04	0.01-0.10	3	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Bean, green, F	0.04	0.01-0.10	5	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Bean, green, French, P	0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Bean, haricot, kidney, O	0.06	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Dried Guthrie, 1975
Bean, kidney (Kintokimame), R	0.03	0.01-0.08	5	AAS, 0.01	Osaka, Japan, [ ]	Tanaka et al., 1977
Bean, kidney (Toramame), R	0.04	0.02-0.07	3	AAS, 0.01	Osaka, Japan, [ ]	Tanaka et al., 1977
Bean, kidney, with pod, R	<0.01	0.01	5	AAS, 0.01	Kochi, Japan, [ ]	Tanaka et al., 1977
Bean, white, R	0.008	<0.050	10	Sp, 0.25 ug	Rumania, [ ]	Rauta and Sporn, 1970
Bean, yellow, butter, R	0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Beans and peas, C	0.024	0.050-0.081	10	Sp., 0.25 ug	Rumania, [ ]	Rauta and Sporn, 1970
Beans, baked, C	0.01	0.01-0.03	7	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Beef, [ ]	0.060	0.050-0.110	10	Sp., 0.25 ug	Rumania, [ ]	Rauta and Sporn, 1970
Beef, O	0.09	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Sausage Guthrie, 1975
	0.07	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Corned, silverside Guthrie, 1975
	0.03	0.01-0.04	8	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Minced steak Guthrie, 1975
	0.02	0.01-0.08	23	AAS, 0.01	Canada, [ ]	Corned Kirkpatrick and Coffin, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Beef, R	0.052	[ ]	[ ]		Japan, [ ]	Yamagata and Shigematsu, 1970
	0.029	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.01	0.01-0.04	5	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
Beef (heifer), liver, R	0.095	0.081-0.120	3	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Beef, chuck, R	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Beef, flesh, R	<0.005	[ ]	141	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
Beef, kidney, [ ]	0.4-1.2	[ ]	[ ]	AAS, [ ]	Australia, [ ]	Miller et al., 1976
Beef, kidney, C	0.50	0.22-0.77	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Beef, kidney, R	0.475	0.040-0.770	11	AAS, 0.005	Augsburg, West Germany, 1973	Kreuzer et al., 1975
	0.448	0.150-1.410	22	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.428	0.070-1.090	19	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.370	0.140-0.670	12	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.290	0.110-0.560	4	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
	0.278	0.060-1.660	17	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Beef, kidney, R	0.251	0.038-0.525	17	AAS, 0.005	Augsburg, West Germany, 1973	Kreuzer et al., 1975
	0.251	[ ]	9	AAS, 0.005	Augsburg, West Germany, 1974	Kreuzer et al., 1975
	0.250	0.060-0.750	19	AAS, 0.005	Augsburg, West Germany, 1973	Kreuzer et al., 1975
	0.22	0.17-0.27	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.173	0.060-0.340	15	AAS, 0.005	Augsburg, West Germany, 1973	Kreuzer et al., 1975
Beef, liver, R	0.22	[ ]	[ ]		Kanto, Japan, [ ]	Yamagata and Shigematsu, 1970
	0.099	0.026-0.300	22	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.09	0.00	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.083	0.016-0.133	8	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
	0.078	0.030-0.200	19	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.076	0.020-0.170	11	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.070	[ ]	9	AAS, 0.005	Augsburg, West Germany, 1974	Kreuzer et al., 1975
	0.068	0.030-0.190	12	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.05	0.01-0.11	4	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Beef, liver, R	0.045	0.013-1.084	17	AAS, 0.005	Augsburg, West Germany, 1973	Kreuzer et al., 1975
	0.042	0.012-0.104	19	AAS, 0.005	Augsburg, West Germany, 1973	Kreuzer et al., 1975
	0.040	0.005-0.086	17	AAS, 0.005	Augsburg, West Germany, 1972	Kreuzer et al., 1975
	0.038	0.010-0.084	15	AAS, 0.005	Augsburg, West Germany, 1973	Kreuzer et al., 1975
	0.01	0.01-0.04	5	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
Beef, pork, veal, [ ]	<0.0002	[ ]	3	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Beef, sirloin, roasting, R	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Beef, t-bone, R	0.10	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Beer, C	<0.002	[ ]	4	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Beer, R	0.008	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
Beer and cider, D	<0.002	[ ]	5	AAS, 0.01	U.K., 1971-1972	Bottled Ministry of Agriculture, Fisheries and Food, 1973
Beet, root, R	0.041	0.012-0.069	12	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Beet, silver, R	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Bonito, O	1.14	[]	[]		Kanto, Japan, []	Processed food Yamagata and Shigematsu, 1970
Brandy, plum, R	<0.010	[]	10	Sp., 0.25 ug	Rumania, []	Rautu and Sporn, 1970
Bread, black, R	0.054	0.050-0.155	9	Sp., 0.25 ug	Rumania, []	Rautu and Sporn, 1970
Bread, white, R	0.042	0.050-0.110	10	Sp., 0.25 ug	Rumania, []	Rautu and Sporn, 1970
	0.03	0.02-0.04	3	AAS, 0.01	Osaka, Japan, []	Ikebe et al., 1977a
	0.02	0.01-0.04	14	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	[]	0.040-0.055	[]		Hokuriku, Japan, []	Yamagata and Shigematsu, 1970
Bread, wholemeal, R	0.03	0.02-0.04	7	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Breadstuff, O	0.05	[]	2	AAS, []	New Zealand, 1971-1973	Brown, 60% wholemeal flour Guthrie, 1975
	0.05	[]	2	AAS, []	New Zealand, 1971-1973	Wholemeal, 100% extraction flour Guthrie, 1975
	0.03	[]	2	AAS, []	New Zealand, 1971-1973	White, 73% extraction flour Guthrie, 1975
Bream, red-spot threadfin (NEMIPTERUS PEPONII), R	0.15	[]	4		Thailand, Inner Gulf, 1972	Huschenbeth and Harms, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Bream, sea, R	0.015	[ ]	[ ]		Hokuriku, Japan, [ ]	Yamagata and Shigematsu, 1972
Broccoli, F	0.05	0.02-0.10	3	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Broccoli, P	0.01	0.01	5	AAS, 0.01	Mie, Japan, [ ]	Tanaka et al., 1977
Brussels sprout, F	0.05	0.02-0.09	3	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Brussels sprout, R	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.03	0.01-0.11	15	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.027	0.017-0.036	4	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Brussels sprout, fresh, O	0.03	0.01-0.11	15	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Buckwheat, O	0.03 (dry basis)	0.01-0.06	3	AAS, 0.01	Nagano, Yamagata, and Mie, Japan, [ ]	Ikebe et al., 1977a
Buckwheat, P	0.10	0.06-0.14	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Burdock, great edible, P	0.09	0.03-0.20	5	AAS, 0.01	Tokushima and Ibaragi, Japan, [ ]	Tanaka et al., 1977
Butter, R	0.034	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Butter, R	<0.01	0.01	3	AAS, 0.01	Hokkaido and Fukushima, Japan, []	Ikebe et al., 1977a
Butter, six types, R	<0.03	0.01-0.07	10	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Butternut, R	<0.01	[]	2	AAS, []	New Zealand, 1971-1973	Guthrie, 1975
Cabbage, R	0.04	0.01-0.15	23	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.031 geo. mean.	0.022-0.094	9	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.012	[]	[]		Hokuriku, Japan, []	Yamagata and Shigematsu, 1970
	0.004	0.0002-0.017	41	AAS, 0.0002	Sweden, []	Fuchs et al., 1976
	<0.05	[]	11	Sp, 0.25 ug	Rumania, []	Rautu and Sporn, 1970
	<0.01	0.01	3	AAS, 0.01	Japan, []	Tanaka et al., 1977
Cabbage, Chinese, R	0.022	[]	[]		Hokuriku, Japan, []	Yamagata and Shigematsu, 1970
	0.02	1.01-0.02	3	AAS, 0.01	Japan, []	Tanaka et al., 1977
Cabbage, fresh, O	0.05	0.01-0.15	23	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Cabbage, green, R	0.01	[]	2	AAS, []	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cabbage, red, R	0.040	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
Cabbage, white, R	0.033	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
Calf, liver, R	0.059	0.013-0.176	9	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Carrot, C	<0.01	0.01-0.02	10	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Carrot, R	0.13	0.09-0.22	8	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.09	0.03-0.22	14	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.07	0.03-0.10	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
	0.050	[ ]	[ ]		Chubu, Japan, [ ]	Yamagata and Shigematsu, 1970
	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.041	0.003-0.150	44	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	0.038 geo. mean	0.016-0.038	14	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.032	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
	<0.05	[ ]	2	Sp., 0.25 ug	Rumania, [ ]	Rauta and Sporn, 1970

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Catfish, seawater (TACHYSURUS sp.), R	0.003	[ ]	3	AAS, [ ]	Thailand, Songkhla area, 1972	Huschenbeth and Harms, 1975
Catsup, tomato, P	0.02	0.01-0.03	5	AAS, 0.01	Aichi, Tokyo, and Osaka, Japan, [ ]	Ikebe et al., 1977a
Cauliflower, R	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.010	0.003-0.021	12	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	0.01	0.01	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Celery, R	0.085	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for eating Essing et al., 1969
	0.064		1	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	0.06	0.01-0.22	5	AAS, 0.01	Shizuoka, Japan, [ ]	Tanaka et al., 1977
	0.04	0.01-0.05	3	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Cereal, O	0.016	0.003-0.025	22	P, 0.25 ng Cd/ml	West Germany, 1974	Processed products Collet, 1975
	<0.03	0.01-0.09	41	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Cereal, breakfast, [ ]	0.01-0.03	[ ]	[ ]	AAS, [ ]	Australia, [ ]	Miller et al., 1976
Cereals, breads, macaroni, P	0.0051	0.0002-0.0160	7	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cereals, ready-to-eat, O	0.20	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	All-bran Guthrie, 1975
	0.20	[ ]	3	AAS, [ ]	New Zealand, 1971-1973	Farex Guthrie, 1975
	0.08	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Weetbix Guthrie, 1975
	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Ricies Guthrie, 1975
	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Branettes Guthrie, 1975
Cereals, to prepare, O	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Oatmeal, dry Guthrie, 1975
	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Rolled oats, dry Guthrie, 1975
Cheese, O	0.01	0.01	3	AAS, 0.01	Tokyo and Hyogo, Japan, [ ]	Processed Ikebe et al., 1977a
Cheese, R	0.0309	0.0150-0.0560	10	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Cheese, "Kaschcaval", R	0.024	0.050-0.100	10	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
Cheese, mild cheddar, R	0.12	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Cheese, process, R	0.015	0.050-0.104	10	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
Cheese, tasty cheddar, R	0.07	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Cheese, twelve varieties, R	<0.04	0.01-0.11	12	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cheese, white, R	0.039	0.050-0.085	10	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
Cherry, R	0.000	0.0002-0.004	14	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Cherry, sour, R	0.040 geo. mean	0.022-0.076	4	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
Chicken, C	0.02		1	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Chicken, O	0.02	0.01-0.03	2	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Chicken, R	0.052	[ ]	[ ]		Japan, [ ]	Yamagata and Shigematsu, 1970
Chicken, dark meat, R	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Chicken, liver, R	0.53	[ ]	[ ]		Japan, [ ]	Yamagata and Shigematsu, 1970
	0.06		1	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	0.05	0.01-0.08	4	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
	0.016	0.008-0.020	6	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Chicken, mature, R	0.01	0.01-0.04	5	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b

(NEXT PAGE)

TABLE 4.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Chicken, white meat, R	0.03	[]	2	AAS, []	New Zealand, 1971-1973	Guthrie, 1975
Citrine, R	0.008	[]	[]	AAS, []	West Germany, []	Prepared for eating Essing et al., 1969
Clam, hen, R	0.12		1	AAS, 0.01	Japan, []	Ikebe et al., 1977b
Clam, short-neck, R	0.13	0.03-0.23	5	AAS, 0.01	Japan, []	Ikebe et al., 1977b
Clam, short-necked (TSUKUDANI), O	0.84	[]	[]		Shikoku, Japan, []	Processed food Yamagata and Shigematsu, 1970
	0.81	[]	[]		Kansai, Japan, []	Processed food Yamagata and Shigematsu, 1970
Clove, R	0.11	[]	2	AAS, []	New Zealand, 1971-1973	Guthrie, 1975
Cocoa and drinking chocolate, R	0.09	0.04-0.14	2	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Cod, R	0.027	[]	[]		Hokuriku, Japan, []	Yamagata and Shigematsu, 1970
	0.006	0.003-0.012	7	AAS, []	Langesund, Norway, 1970-1971	Fish muscle analyzed Havre et al., 1973
Cod (GADUS MORRHUA), muscle, R	0.11	[]	6	AAS, []	U.K., NE Coast, 1972-1973	No known contamination sources Wright, 1976
Cod (TRISOPTERUS MINUTUS), R	8.5 (dry basis)	[]	100		Oldbury-on-Severn, U.K., 1973	Whole fish Hardisty et al., 1974
Cod, artic (BOREOGADUS SAIDA), O	<0.05 (dry basis)	[]	7	AAS, []	Baffin Island, 1974-1975	Fillet Bohn and McElroy, 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cod, artic (BOREOGADUS SAIDA), R	0.62 (dry basis)	0.26-1.5 (dry basis)	47	AAS, [ ]	Baffin Island, 1974,1975	Whole fish Bohn and McElroy, 1976
Cod, artic, liver (BOREOGADUS SAIDA), R	0.72 (dry basis)	0.35-1.5 (dry basis)	15	AAS, [ ]	Baffin Island, 1974,1975	Bohn and McElroy, 1976
Cod, Atlantic (GADUS MORHUA), R	0.043	0.000-0.119	10	AAS, [ ]	Icelandic waters, [ ]	Zook et al., 1976
Cod, blue, O	0.07		1	AAS, [ ]	New Zealand, 1971-1973	Smoked Guthrie, 1975
Cod, blue, R	0.07		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Cod, fillets, P	0.01		1	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Cod, fillets, R	0.18		1	AAS, [ ]	North Sea, 1970	Portmann, 1972
	0.12	[ ]	7	AAS, [ ]	U.K. coastal waters, 1970	Portmann, 1972
	<0.05	[ ]	2	AAS, [ ]	Waters distant from U.K., 1970	Portmann, 1972
Cod, offshore, R	[ ]	0.002-0.018	19	AAS, 0.0001	German Bight, 1972-1974	Muscle analyzed Harms, 1975
Cod, red, R	0.03		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Coffee, O	0.064	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Ready to use Essing et al., 1969
	<0.01	0.01	3	AAS, 0.01	Osaka, Tokyo, and Hyogo, Japan, [ ]	Powdered extract, instant Ikebe et al., 1977a
Coffee, bean, R	0.03	0.02-0.04	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS, REFERENCES
Coffee, green; coffee instant; cocoa; tea, F	0.0101	0.0002-0.0505	5	AAS, 0.0002	Alsace, France, []	Laugel et al., 1976
Coffee, instant, R	0.07	0.04-0.08	3	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Corn, C	0.08		1	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Corn, P	0.03	0.01-0.09	3	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Corn, O	0.05	[]	2	AAS, []	New Zealand, 1971-1973	Meal Guthrie, 1975
	<0.050	[]	10	Sp., 0.25 ug	Rumania, []	Meal Sauta and Sporn, 1970
Corn, grain, R	0.01 (dry basis)	0.01-0.08 (dry basis)	24	F, 0.01	West Germany, []	Mean recalculated to include all samples. Crossman and Exels, 1975
Corn, sweet, R	0.07	[]	2	AAS, []	New Zealand, 1971-1973	Guthrie, 1975
Crab, C	3.1	1.0-5.2	5	Sp., []	U.K., []	Dressed crabmeat Reynolds and Reynolds, 1971
	0.123		1	Sp., 0.05 ug	Japan, []	Schroeder and Balassa, 1961
	0.123		1	Sp., 0.05 ug	Japan, []	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Crab, O	6.4	2.5-8.6	6	Sp., [ ]	U.K., [ ]	Crabmeat raw, dark body and mixed Reynolds and Reynolds, 1971
	1.7	0.5-4.0	5	Sp., [ ]	U.K., [ ]	Crab pastes and spreads Reynolds and Reynolds, 1971
	1.4	1.2-1.7	2	AAS, 0.01	U.K., 1971-1972	Paste Ministry of Agriculture, Fisheries and Food, 1973
Crab, R	[ ]	0.076-0.14	[ ]		San-in, Japan, [ ]	Yamagata and Shigematsu, 1970
Crab (CANCER PAGURUS), whole, R	0.36	[ ]	3	AAS, [ ]	U.K., NE coast, 1972-1973	No known contamination sources Wright, 1976
Crab, clawmeat and other white meat, C	0.09	0.05-0.15	6	Sp., [ ]	U.K., [ ]	Reynolds and Reynolds, 1971
Crab, dressed, contains brown meat, C	3.8	1.3-6.4	2	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Crab, red, R	0.02		1	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
Crab, white meat, C	<0.01		1	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Crab, whole, cocks (CANCER PAGURUS L.) R	4.4	0.17-8.4	9	Sp., [ ]	U.K., [ ]	Edible portions Reynolds and Reynolds, 1971

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS, REFERENCES
Crab, whole, hens (CANCER PAGURUS L.), R	5.8	2.1-9.7	20	Sp., [ ]	U.K., [ ]	Edible portions Reynolds and Reynolds, 1971
Cream, C	0.01		1	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Cream, P	<0.01	[ ]	7	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Cream, coffee, P	0.02	0.01-0.04	3	AAS, 0.01	Tokyo, Hyogo, and Hokkaido, Japan, [ ]	Ikebe et al., 1977a
Cucumber, R	0.012	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.01	0.01	3	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.003	0.0002-0.014	29	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	<0.01	0.01	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
	<0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Currant, black, C	<0.01	0.01	4	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Current, black, C	0.01	0.01	4	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Current, black, R	0.074 geo. mean	0.055-0.098	5	AAS, 0.002	Dortmund, West Germany, 1973-1974	Authors' mean corrected from 0.047. Pfeilsticker and Markard, 1975

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Current, red, R	0.054 geo. mean	0.036-0.101	3	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
Curry roux, P	0.01	0.01	3	AAS, 0.01	Nara, Osaka, and Tokyo, Japan, [ ]	Ikeda et al., 1977a
Cuttlefish (MONKO), O	0.18	[ ]	[ ]		Africa, [ ]	Dried Yamagata and Shigematsu, 1970
Cuttlefish (SURUME), O	0.12	[ ]	[ ]		San-in, Japan, [ ]	Dried Yamagata and Shigematsu, 1970
Cuttlefish, liver (MONKO), O	110.0	[ ]	[ ]		Africa, [ ]	Dried Yamagata and Shigematsu, 1970
Cuttlefish, liver (SURUME), O	94.0	[ ]	[ ]		San-in, Japan, [ ]	Dried Yamagata and Shigematsu, 1970
Damson. C	<0.01	0.01	2	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	<0.01	0.01	2	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Duck, liver, R	<0.01		1	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Eel, liver (ANGUILLA ANGUILLA), R	5.020 (dry basis)	0.002-10.4 (dry basis)	12	AAS, 0.002	U.K., [ ]	Someril and Davis, 1976
Eel, muscle (ANGUILLA ANGUILLA), R	0.336 (dry basis)	0.002-1.19 (dry basis)	12	AAS, 0.002	U.K., [ ]	Someril and Davis, 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Eel, with skin, [ ]	0.04	[ ]	5	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Egg, R	0.028	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	<0.01	0.01-0.03	10	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Egg, hen, R	0.022	[ ]	10	Sp., 0.25 ug	Rumania, [ ]	Rauta and Sporn, 1970
	0.01	0.01-0.03	100	AAS, 0.01	Canada, [ ]	No differences observed among different regions of country. Kirkpatrick and Coffin, 1975
Egg, hen, whole, R	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Egg, hen, yolk, R	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Eggplant, R	0.03	0.02-0.04	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Elk, flesh, R	0.59		1	AAS, [ ]	Porvoo, Finland, 1965	Jaakkola et al., 1973
Elk, kidney, R	8.05		1	AAS, [ ]	Porvoo, Finland, 1965	Jaakkola et al., 1973
Elk, liver, R	1.50		1	AAS, [ ]	Porvoo, Finland, 1965	Jaakkola et al., 1973
Fat, R	<0.03	0.01-0.25	41	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Fish, [ ]	<0.05-0.15	[ ]	[ ]	AAS, [ ]	Australia, [ ]	Miller et al., 1976
Fish, C	0.015	0.008-0.050	16	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Fish, P	0.192	0.029-0.554	7	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Fish, O	0.126	0.027-0.488	12	AAS, 0.0002	Alsace, France, [ ]	Preserved Laugel et al., 1976
	0.01	0.01	3	AAS, 0.01	Kochi, Tokyo, and Hyogo, Japan, [ ]	Boiled cake Ikebe et al., 1977a
	0.01	0.01	3	AAS, 0.01	Osaka, Toyama, and Niigata, Japan, [ ]	Paste, boiled Ikebe et al., 1977a
	<0.02	0.01-0.05	40	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Fish, R	0.014	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
Fish, commercial species, R	0.08	0.02-0.17	100	AAS, [ ]	Med. Coast, Israel, 1974	Edible muscle analyzed. Roth and Hornung, 1977
Fish, Gurnard, R	0.015 geo. mean	0.008-0.024	70	AAS, [ ]	New Zealand coastal waters, 1973	Edible muscle analyzed. Brooks and Rumsey, 1974
Fish, Hapuku, R	0.005 geo. mean	0.001-0.011	70	AAS, [ ]	New Zealand coastal waters, 1973	Edible muscle analyzed. Brooks and Rumsey, 1974
Fish, Kahawai, R	0.002 geo. mean	0.002-0.003	70	AAS, [ ]	New Zealand coastal waters, 1973	Edible muscle analyzed. Brooks and Rumsey, 1974

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Fish, Lemon, []	0.05		1	AAS, []	New Zealand, 1971-1973	Guthrie, 1975
Fish, marine, R	0.022	0.005-0.045	9	AAS, 0.0002	Alsace, France, []	Laurel et al., 1976
Fish, mixed species, muscle tissue, R	0.02	0.00-0.10	[]	AAS, []	Taiwan, 1973	Jeng and Huang, 1973
Fish, Moki, R	0.005 geo. mean	0.001-0.012	70	AAS, []	New Zealand coastal waters, 1973	Edible muscle analyzed. Brooks and Rumsey, 1974
Fish, Tarakihi, R	0.006 geo. mean	0.002-0.015	68	AAS, []	New Zealand coastal waters, 1973	Edible muscle analyzed. Brooks and Rumsey, 1974
Fish, Trevally, R	0.010 geo. mean	0.006-0.012	70	AAS, []	New Zealand coastal waters, 1973	Edible muscle analyzed. Brooks and Rumsey, 1974
Fish, with oil, C	0.066	0.050-0.210	10	Sp., 0.25 ug	Rumania, []	Rautu and Sporn, 1972
Fish, with tomato sauce, C	0.074	0.050-0.253	10	Sp., 0.25 ug	Rumania, []	Rautu and Sporn, 1972
Fish, 13 species, R	0.039	0.000-0.204	95	AAS, []	Carinthian lakes, Austria, []	[illegible] et al., 1975
Flounder, R	0.01	0.01-0.02	3	AAS, 0.01	Northern Atlantic Ocean, []	Ikebe et al., 1977b
Flounder (PLATICHTHYES FLESUS), R	5.6 (dry basis)	[]	250		Oldbury-on-Severn, U.K., 1973	Whole fish. Hardisty et al., 1974
Flour, white, R	<0.03	0.01-0.05	1	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Flour, wholemeal, P	0.07	0.02-0.13	5	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Fruit, R	0.004	0.003-0.007	20	P, 0.25 ug Cd/ml	West Germany,	Collet, 1975
Fruit, R and O	0.00137	0.0002-0.0040	11	AAS, 0.0002	Alsace, France, [ ]	Fresh and preserved Laugel et al., 1976
Fruit juices, C	<0.01	0.01-0.02	13	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Fruit juices, R	<0.01	[ ]	7	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Fruit, mixed types, R	0.003	0.0002-0.029	>32	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Fruits and preserves, O	<0.01	0.01-0.02	41	AAS, 0.01	U.K., 1971-1972	Prepared for eating Ministry of Agriculture, Fisheries and Food, 1973
Garlic, Chinese, P	0.07	0.02-0.16	3	AAS, 0.01	Hokkaido and Oita, Japan, [ ]	Tanaka et al., 1977
Ginger root, R	0.04	0.01-0.06	3	AAS, 0.01	Kochi and Tokushima, Japan, [ ]	Tanaka et al., 1977
Gooseberry, R	0.033 geo. mean	0.023-0.051	8	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
Grapefruit, C	0.01	[ ]	4	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Grapefruit, C	<0.01	0.01	4	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Grapefruit, R	<0.01	0.01	3	AAS, 0.01	Japan, [ ]	Imported from U.S. Tanaka et al., 1977
Grapes, R	0.007	[ ]	10	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
Grouper, [ ]	0.02		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Herbs, O	0.04	0.02-0.06	6	AAS, 0.01	U.K., 1971-1972	Dried Thomas et al., 1972
Herbs, six types, O	0.79	0.02-3.1	15	AAS, 0.01	U.K., 1971-1972	Dried Ministry of Agriculture, Fisheries and Food, 1973
Herring, O	<0.050	[ ]	10	Sp., 0.25 ug	Rumania, [ ]	Smoked Rautu and Sporn, 1970
	<0.050	[ ]	10	Sp., 0.25 ug	Rumania, [ ]	Salted Rautu and Sporn, 1970
Herring, R	0.016	0.004-0.033	6	AAS, [ ]	Langesund, Norway, 1970-1971	Fish muscle analyzed Havre et al., 1973
Honey, R	0.06	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.0055	0.0002-0.011	2	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
	<0.01	0.01	3	AAS, 0.01	Tokyo and Nara, Japan, [ ]	Ikebe et al., 1977a
Horseradish powder, R	0.22	0.16-0.30	3	AAS, 0.01	Osaka and Tokyo, Japan, [ ]	Ikebe et al., 1977a
Jam, strawberry, R	0.01	0.01	3	AAS, 0.01	Tokyo, Kochi, and Hiroshima, Japan, [ ]	Ikebe et al., 1977a

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Jellies, seven flavors, F	<0.03	0.01-0.10	7	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Kidney, type unspecified, C	0.432	0.050-0.762	9	Sp., 0.25 ug	Rumania, [ ]	Bautu and Sporn, 1970
Kingfish, F	0.006 geo. mean	0.002-0.014	70	AAS, [ ]	New Zealand coastal waters, 1973	Edible muscle analyzed. Brooks and Rumsey, 1974
Kohlrabi, R	0.08	[ ]	12	AAS, [ ]	Jena, GDR, [ ]	Anke et al., 1976
	0.031	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
	0.026 geo. mean	0.010-0.071	14	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
Lamb, O	0.02	0.01-0.03	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Lamb, chops, R	0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Lamb, kidney, O	0.27	0.02-0.71	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Lamb, liver, O	0.02	0.01-0.06	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Lard, two types, R	0.03	0.02-0.04	2	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Leafy vegetables, mixed, R	0.07	0.05-0.1	6	AAS, 0.01	U.K., 1971-1972	Grown 8 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
Leek, R	0.04	0.02-0.09	4	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.025	0.010-0.050	5	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Leek, fresh, O	0.04	0.02-0.09	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Legume vegetables, O	0.00185 ug/ml	0.0002-0.0041 ug/ml	9	AAS, 0.0002	Alsace, France, [ ]	Soup, with and without meat Laugel et al., 1976
Lemon, R	0.01	0.01-0.04	5	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Lentil, brown, O	0.06	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Dried Guthrie, 1975
Lettuce, R	0.029	0.0002-0.160	26	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Lettuce, head, R	0.054 geo. mean	0.031-0.147	9	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.042	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for eating Essing et al., [illegible]
	0.03	0.02-0.35	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Lettuce, leaf, R	0.093 geo. mean	0.037-0.198	5	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
Ling fish, [ ]	0.03		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Lizardfish (SAURIDA ELONGATA), R	0.04	[ ]	5	AAS, [ ]	Thailand, Rayong area, 1972	Huschenbeth and Harms, 1975
Lizardfish (SYNODUS SIMILIS), R	0.030	[ ]	6	AAS, [ ]	Thailand, Inner Gulf, 1972	Huschenbeth and Harms, 1975
Lobster, claw meat, C	<0.1	[ ]	3	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Lobster, mixed claw and tail meat, C	1.1	0.90-1.3	2	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Lobster, tail meat, C	<0.1		1	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Mackerel, C	0.19	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.06	0.02-0.12	3	AAS, 0.01	Tokyo, Japan, [ ]	Ikebe et al., 1977a
Mackerel, R	0.01	0.01-0.02	12	AAS, 0.01	Shizuoka, Japan, [ ]	Ikebe et al., 1977b
	0.01	0.01-0.03	14	AAS, 0.01	Nagasaki, Japan, [ ]	Ikebe et al., 1977b
Mackerel, Spanish, R	<0.01	0.01	5	AAS, 0.01	Korea, [ ]	Ikebe et al., 1977b

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Margarine, R	0.035	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	<0.02	0.01-0.03	3	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	<0.01	0.01	3	AAS, 0.01	Tokyo and Hokkaido, Japan, [ ]	Ikebe et al., 1977a
Margarine, polyunsaturated, R	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Marmalade, R	0.007	[ ]	10	Sp, 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
Marmalade, orange, R	<0.01	<0.01	3	AAS, 0.01	Tokyo, Hokkaido, and Hiroshima, Japan, [ ]	Ikebe et al., 1977a
Marrow, R	<0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Mayonnaise, R	0.01	0.01-0.02	2	AAS, 0.01	Tokyo, Japan, [ ]	Ikebe et al., 1977a
Meat, C	0.027	0.050-0.100	14	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
	0.014	0.005-0.018	4	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Meat, O	0.03	0.01-0.07	20	AAS, 0.01	Canada, [ ]	Bologna Kirkpatrick and Coffin, 1973
	0.02	0.01-0.05	25	AAS, 0.01	Canada, [ ]	Salami Kirkpatrick and Coffin, 1973
	0.02	0.01-0.04	22	AAS, 0.01	Canada, [ ]	Processed luncheon meat Kirkpatrick and Coffin, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Meat, O	0.019	0.050-0.083	10	Sp., 0.25 ug	Rumania, [ ]	Cold cuts Fautu and Sporn, 1970
	0.012	0.008-0.020	7	P, 0.25 ng Cd/ml	West Germany, 1974	Sausage products Collet, 1975
	0.01	0.01-0.04	17	AAS, 0.01	Canada, [ ]	Smoked and unsmoked weiners Kirkpatrick and Coffin, 1973
Meat and fish, O	<0.02	0.01-0.09	41	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Meat pie, steak and kidney, C	0.08	0.04-0.12	2	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Meat, all types, C, R or O	0.02	0.01-0.22	190	AAS, 0.01	Canada, [ ]	Kirkpatrick and Coffin, 1973
Meat, miscellaneous, O	0.03	0.01-0.09	15	AAS, 0.01	Canada, [ ]	Pastrami, smoked meats, dried uncooked ham, etc. Kirkpatrick and Coffin, 1973
Meat, ready-to-eat, C	0.02	0.01-0.22	15	AAS, 0.01	Canada, [ ]	Kirkpatrick and Coffin, 1973
Milk, O	0.07	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Powdered skim Guthrie, 1975
	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Powdered fullcream Guthrie, 1975
	0.011	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Condensed Essing et al., 1969

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Milk, O	0.009		1	AAS, 0.0002	Alsace, France, [ ]	Powdered Laugel et al., 1976
Milk, R	0.024 geo. mean	0.010-0.076	3	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.009	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.000047	0.000011-0.0004	12	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
	<0.25	[ ]	10	Sp., 0.25 ug	Rumania, [ ]	Fautu and Sporn, 1970
	<0.002	0.001-0.007	30	AAS, 0.001	U.K., 1972	Ministry of Agriculture, Fisheries and Food, 1973
	<0.0002	[ ]	98	P, 0.0002	Sweden, [ ]	Jonsson, 1976
Milk powder, C	0.03	0.01-0.06	2	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Milk, evaporated and condensed, R	<0.01	0.01-0.02	5	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Mullet, grey (LIZA RAMADA), R	3.0 (dry basis)	[ ]	100		Oldbury-on-Severn, U.K., 1973	Whole fish Hardisty et al., 1974
Mushroom, C	0.11	0.03-0.19	2	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Mushroom, R	0.02	0.01-0.04	6	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.02	0.01-0.02	3	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.016	0.005-0.046	12	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Mussel, R	<010.0 (dry basis)	[ ]	6	ES, 20	Tasman Bay, New Zealand, [ ]	Brooks and Rumsby, 1965
Mustard, O	0.03		1	AAS, 0.01	Nara, Japan, [ ]	Prepared Ikebe et al., 1977a
Mustard, R	0.0037	0.0034-0.0040	2	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Mustard, powder, R	0.16	0.16-0.16	2	AAS, 0.01	Osaka and Tokyo, Japan, [ ]	Ikebe et al., 1977a
Mutton, chops, R	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Mutton, kidney, R	2.8	[ ]	35	AAS, [ ]	Bitterfeld, GDR, [ ]	Site of chemical industry Anke et al., 1976
	1.4	[ ]	35	AAS, [ ]	Merseburg, GDR, [ ]	Site of chemical industry Anke et al., 1976
	0.09	0.04-0.13	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Mutton, liver, R	0.72	[ ]	35	AAS, [ ]	Bitterfeld, [ ]	Site of chemical industry Anke et al., 1976
	0.51	[ ]	35	AAS, [ ]	Merseburg, GDR, [ ]	Site of chemical industry Anke et al., 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Mutton, liver, R	0.13	0.09-0.16	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Oats, R	0.014	[ ]	8	AAS, 0.010	North Sweden, 1971	Kjellstrom et al., 1974
	0.011	[ ]	8	AAS, 0.010	South Sweden, 1971	Kjellstrom et al., 1974
Oats, grain, [ ]	0.04	[ ]	12	AAS, [ ]	Jena, GDR, [ ]	Anke et al., 1976
Oats, grain, R	0.01 (dry basis)	0.01-0.28 (dry basis)	67	P, 0.01	West Germany, [ ]	Authors' data recal'd to include all samples in mean. Crossman and Egels, 1975
Octopus, R	<0.01	[ ]	[ ]		Hokuriku, Japan, [ ]	Yamagata and Shigematsu, 1970
Octopus, liver, R	25.0	[ ]	[ ]		Hokuriku, Japan, [ ]	Yamagata and Shigematsu, 1970
Oil, R	<0.010	[ ]	10	Sp, 0.25 ug	Rumania, [ ]	Pautu and Sporn, 1970
Oil and fat, R	0.0026	0.0015-0.0036	4	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Oil, cooking, three types, R	<0.03	0.01-0.04	3	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Oil, olive, R	0.008	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
Oil, peanut, R	<0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE 4.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Oil, sunflower, P	<0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Okra, P	0.08	0.04-0.11	4	AAS, 0.01	Kochi, Japan, [ ]	Tanaka et al., 1977
Onion, P	0.08	[ ]	12	AAS, [ ]	Jena, GDR, [ ]	Anke et al., 1976
	0.07	0.03-0.14	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
	0.04	0.01-0.09	11	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.04	0.01-0.09	11	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.027 geo. mean	0.018-0.040	2	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.017	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.011	0.0002-0.036	21	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	0.008	[ ]	2	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
	0.003	[ ]	[ ]		Hokkaido, Japan, [ ]	Yamagata and Shigematsu, 1970
Onion, long, R	0.018	[ ]	[ ]		Hokuriku, Japan, [ ]	Yamagata and Shigematsu, 1970
Onion, mature, white, P	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Onion, Welsh, R	0.03	0.02-0.06	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Orange, C	0.01	0.01	3	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Orange, R	0.029	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for eating Essing et al., 1969
	0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.002	[ ]	[ ]		Kyushu, Japan, [ ]	Yamagata and Shigematsu, 1970
	0.002	0.0002-0.007	4	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Orange (mandarin), C	<0.01	[ ]	3	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Oxtail, D	0.0037	0.0004-0.0061	43	P, 0.25 ng Cd/ml	West Germany, 1974	Dried oxtail soup. Data are for reconstituted product. Collet, 1975
Oyster, [ ]	<2.0-19.8	[ ]	[ ]	AAS, [ ]	Tasmania, [ ]	Miller et al., 1976
	<0.05-0.85	[ ]	[ ]	AAS, [ ]	Australia, [ ]	Miller et al., 1976
Oyster, R	35.0 (dry basis)	20-43 (dry basis)	6	ES, 20	Tasman Bay, New Zealand, [ ]	Brooks and Rumsby, 1965
	0.28	0.23-0.32	7	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
Oyster (CRASSOSTREA COMMERCIALIS), R	0.2	0.1-1.0	980	AAS, 0.05	Australia, 1973	Mackay et al., 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Oyster (CRASSOSTREA GIGAS), R	3.7 (dry basis)	[]	57	AAS, []	South Africa, []	Watling and Watling, 1976
Oyster (CRASSOSTREA MARGARITACEA), R	2.5 (dry basis)	[]	56	AAS, []	South Africa, []	Watling and Watling, 1976
Oyster (OSTREA ANGASI Sowerby), R	10.7		1	AAS, 0.05	Tasmanian waters, 1972-1973	Eustace, 1974
Oyster (OSTREA EDULIS), R	3.1 (dry basis)	[]	56	AAS, []	South Africa, []	Watling and Watling, 1976
Oyster (OSTREA LUTARIA), R	6.43	[]	14-20	AAS, []	Foveaux Strait, New Zealand, []	High cadmium concentration thought to occur naturally since industrial pollution is absent from immediate area. Nielsen, 1975
Oyster, Bluff, C	0.19	[]	2	AAS, []	New Zealand, 1971-1973	Guthrie, 1975
Oyster, cultured (CRASSOSTREA GIGAS), R	0.25	[]	30	AAS, []	Taiwan coastal waters, 1973	Jeng and Huang, 1973
	0.22	[]	30	AAS, []	Taiwan coastal waters, 1973	Jeng and Huang, 1973
	0.21	[]	30	AAS, []	Taiwan coastal waters, 1973	Jeng and Huang, 1973
	0.21	[]	60	AAS, []	Taiwan coastal waters, 1973	Jeng and Huang, 1973
Parsley, R	0.081 geo. mean	0.043-0.170	6	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
Parsnip, R	0.057	0.016-0.111	5	AAS, 0.0002	Sweden, []	Fuchs et al., 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Parsnip, R	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Pea, C	0.07	0.05-0.09	10	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Pea, F	0.02	0.01-0.09	6	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Pea, F	0.042 (geo. mean)	0.019-0.075	12	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975.
	0.004	0.003-0.005	5	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Pea, green, R	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.01	0.01-0.02	3	AAS, 0.01	Kyoto and Osaka, Japan, [ ]	Ikebe et al., 1977a
Pea, green, processed, [ ]	0.001	[ ]	[ ]	AAS, [ ]	Australia, [ ]	Miller et al., 1976
Pea, split, O	0.06	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Dried Guthrie, 1975
Pea, with pod (Sayaendo), R	0.01	0.01	3	Sp., 0.01	Japan, [ ]	Tanaka et al., 1977
Peach, C	0.01	0.01	4	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
	<0.01	[ ]	4	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Peach, F	0.011	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for eating Essing et al., 1969

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Peach, R	0.002	0.0002-0.006	4	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Peach, Golden Queen, R	<0.01		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Peanut, R	0.08	0.04-0.11	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Peanut butter, R	0.08	0.02-0.18	3	AAS, 0.01	Tokyo, Osaki, and Ibaragi, Japan, [ ]	Ikebe et al., 1977a
Pear, R	0.012	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for eating Essing et al., 1969
	0.011 geo. mean	0.010-0.013	3	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
Pear, flesh, R	0.02	0.01-0.09	11	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Pear, skin, R	0.02	0.01-0.04	11	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Pear, whole, R	0.03	0.01-0.09	6	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	0.03	0.01-0.09	6	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
Pear, with skin, Louise Bonne de Jersey, R	0.02		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Pepper, sweet, R	0.04	0.03-0.05	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Pepper, sweet, R	0.029	0.015-0.043	4	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1974
Peppercorn, black, R	0.14	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Peppercorn, white, R	0.06	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Pike, R	0.004	0.001-0.008	3	AAS, [ ]	Langesund, Norway, 1970-1971	Fish muscle analyzed. Havre et al., 1973
Pike (ESOX LUCIUS L.), R	0.003		1	AAS, [ ]	Gulf of Finland, Tvarminne, 1970	Flesh analyzed Jaakkola et al., 1973
	0.002		1	AAS, [ ]	Gulf of Finland, Tammisaari, 1970	Flesh analyzed Jaakkola et al., 1973
Pike, flesh (ESOX LUCIUS L.), R	0.013		1	AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.005		1	AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.004	0.003-0.004	2	AAS, [ ]	Gulf of Finland, Huttinen, Finland, 1968	Jaakkala et al., 1973
	0.004	0.003-0.004	2	AAS, [ ]	Gulf of Finland, Porkkala, Finland, 1968	Jaakkala et al., 1973
	0.004		1	AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.004		1	AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
Pike, kidney (ESOX LUCIUS L.), R	0.339		1	AAS, [ ]	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Pike, kidney (ESOX LUCIUS L.), R	0.308		1	AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.295		1	AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.232		1	AAS, []	Gulf of Finland, Tvarminne, 1970	Jaakkola et al., 1973
	0.169		1	AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.028		1	AAS, []	Gulf of Finland, Tammisaari, 1970	Jaakkola et al., 1973
Pike, liver (ESOX LUCIUM L.), R	0.003		1	AAS, []	Gulf of Finland, Tammisaari, 1970	Jaakkola et al., 1973
Pike, liver (ESOX LUCIUS L.), R	0.113		1	AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.096		1	AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.070		1	AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
	0.055		1	AAS, []	Gulf of Finland, Tvarminne, 1970	Jaakkola et al., 1973
	0.034		1	AAS, []	Gulf of Bothnia, Kokkola, Finland, 1970	Jaakkola et al., 1973
Pineapple, C	0.01	0.01-0.03	5	AAS, 0.01	U.K., []	Thomas et al., 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Pineapple, C	<0.01	0.01-0.03	5	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Plaice, fillets, R	0.12		1	AAS, [ ]	North Sea, 1970	Portmann, 1972
	0.07	[ ]	13	AAS, [ ]	U.K. coastal waters, 1970	Portmann, 1972
	0.05	[ ]	2	AAS, [ ]	Waters distant from U.K., 1970	Portmann, 1972
Plaice, offshore, R	[ ]	0.002-0.017	17	AAS, 0.0001	German Bight, 1972-1974	Harms, 1975
Plaice, onshore, R	[ ]	0.004-0.073	21	AAS, 0.0001	German Bight, 1972-1974	Harms, 1975
Plum, C	0.01	0.01	12	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Plum, R	0.036 geo. mean	0.014-0.067	7	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.014	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for eating Essing et al., 1969
	0.01	0.01-0.04	6	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
	0.001	0.0002-0.005	15	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	<0.02	0.01-0.04	5	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Plum, three varieties, C	<0.01	0.01	11	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Plum, with skin, Omega, R	0.01		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Pollack (Tara), P	<0.01	0.01	3	AAS, 0.01	Northern Ocean, [ ]	Ikebe et al., 1977b
Pomfret, black (PARASTROMATEUS NIGER), R	0.051	[ ]	5	AAS, [ ]	Rayong Area, Thailand, 1972	Huschenbeth and Harms, 1975
Ponyfish (LEIOGNATHUS EQUULUS), R	0.007	[ ]	10	AAS, [ ]	Thailand, Songhkla area, 1972	Huschenbeth and Harms, 1975
Pork, [ ]	0.035	0.050-0.075	10	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
Pork, O	0.10	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Bacon Guthrie, 1975
	0.07	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Sausage Guthrie, 1975
	0.06	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Ham Guthrie, 1975
	0.032		1	AAS, 0.0002	Alsace, France, [ ]	Ham Laugel et al., 1976
	0.03	0.02-0.05	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.03	0.02-0.03	3	AAS, 0.01	Osaka or Aichi, Japan, [ ]	Ham Ikebe et al., 1977a
	0.03	0.01-0.09	3	AAS, 0.01	Aichi and Osaka, Japan, [ ]	Smoked bacon Ikebe et al., 1977a
	0.03	0.01-0.06	23	AAS, 0.01	Canada, [ ]	Ham Kirkpatrick and Coffin, 1973

(NEXT PAGE)

TABLE 4.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Pork, O	<0.01	0.01-0.06	18	AAS, 0.01	Canada, [ ]	Bacon Kirkpatrick and Coffin, 1973
Pork, R	0.032	[ ]	[ ]		Hokuriku, Japan, [ ]	Yamagata and Shigematsu, 1970
	0.018	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
	<0.01	0.01	3	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
Pork, brain, R	<0.0002		1	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Pork, chops, R	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Pork, kidney, O	0.24	0.01-0.59	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Pork, kidney, R	0.721	0.141-2.038	18	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
	0.172	0.144-0.200	2	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
	0.13	0.07-0.18	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Pork, liver, O	<0.05	0.01-0.11	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Pork, liver, R	0.482	0.041-1.72	6	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
	0.080	[ ]	[ ]		Hokuriku, Japan, [ ]	Yamagata and Shigematsu, 1970

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Pork, liver, R	0.070	0.016-0.133	9	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Pork, loin, R	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Potato, R	0.08	0.01-0.17	13	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.08	0.01-0.17	19	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.041	[ ]	[ ]		Hokkaido, Japan, [ ]	Yamagata and Shigematsu, 1970
	0.04	[ ]	12	AAS, [ ]	Jena, GDR, [ ]	Anke et al., 1976
	0.039	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
	0.02	0.01-0.03	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
	0.017	0.050-0.057	10	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
	0.016	0.005-0.055	52	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Potato, new, Red King, R	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Potato, new, white, R	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Potato, sweet, R	0.01	0.01-0.02	5	AAS, 0.01	Shizuoka, Japan, [ ]	Tanaka et al., 1977
Prawn (LEANDER SERRATUS), whole, R	2.80	[ ]	3	AAS, [ ]	U.K., NE Coast, 1972-1973	No known contamination sources Wright, 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Prawn, Green Tiger (PENAEUS SEMISULCATUS), R	0.01	[ ]	4	AAS, [ ]	Thailand, Payong area, 1972	Huschenbeth and Harms, 1975
Prawn, Tiger (PENAEUS MONODON), R	0.13	[ ]	4	AAS, [ ]	Thailand, Payong area, 1972	Huschenbeth and Harms, 1975
Prune, C	0.01	0.01	6	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
	<0.01	0.01-0.02	6	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Pumpkin, R	0.01	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	<0.01	0.01	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Rabbit, kidney, R	0.042		1	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Rabbit, liver, R	0.068		1	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
	0.01		1	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Radish, R	0.044	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.017	[ ]	[ ]		Hokkaido, Japan, [ ]	Yamagata and Shigematsu, 1970

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Radish, R	0.016 geo. mean	0.011-0.027	6	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.008		1	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Radish, root, Japanese, O	0.13	0.11-0.16	3	AAS, 0.01	Osaka, Japan, [ ]	Chopped, dried Tanaka et al., 1977
Radish, root, Japanese, R	<0.01	0.01	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Rape, R	0.05	0.03-0.07	4	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
Raspberry, gooseberry, red and black currents, R	0.005	0.0002-0.024	5	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Rhubarb, C	0.01	0.01	8	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
	<0.01	[ ]	6	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Rhubarb, R	0.025 geo. mean	0.010-0.057	9	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.02	0.01-0.04	5	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
	0.02	0.01-0.04	5	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Rice, O	0.10	[ ]	34	AAS, [ ]	Japan, [ ]	Polished Kjellstrom et al., 1977
	0.07	0.04-0.13	3	AAS, 0.01	Nigata, Gifu, and Hyogo, Japan, [ ]	Processed cake (Mochi) Ikebe et al., 1977a
	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Polished grain Guthrie, 1975
Rice, R	0.023	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
Rice, bran, R	0.039		1	Sp., 0.05 ug	Okayama, Japan, [ ]	Schroeder and Balassa, 1961
Rice, polished, R	0.137		1	Sp., 0.05 ug	Yokote, Japan, [ ]	Schroeder and Balassa, 1961
	0.125		1	Sp., 0.05 ug	Kurashiki, Japan, [ ]	Schroeder and Balassa, 1961
	0.106		1	Sp., 0.05 ug	Odate, Japan, [ ]	Schroeder and Balassa, 1961
	0.077		204	Sp., 0.05 ug	All areas of Japan, [ ]	Schroeder and Balassa, 1961
	0.07	[ ]	[ ]		All areas of Japan, [ ]	Normal exposure Yamagata and Shigematsu, 1970
	0.010		1	Sp., 0.05 ug	Kojyo, Japan, [ ]	Schroeder and Balassa, 1961
Rice, unpolished, R	0.13	[ ]	34	AAS, [ ]	Japan, [ ]	Kjellstrom et al., 1977

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Rice, unpolished, R	0.088		1	Sp., 0.05 ug	Koivo, Japan, [ ]	Schroeder and Balassa, 1961
	0.075	0.03-0.11	6		Toyama, Japan, 1967	Normal exposure Yamagata and Shigematsu, 1970
Rice, unpolished grain, R	0.04	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Rockfish, black, R	0.01	0.01	9	AAS, 0.01	Nigata, Miyazaki, and Hokuriku, Japan, [ ]	Ikebe et al., 1977b
Rutabaga, R	0.05	0.01-0.09	8	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
	0.05	0.01-0.09	8	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
	0.016	0.010-0.026	13	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Rye, C	0.07	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Flour Guthrie, 1975
	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Breadstuff Guthrie, 1975
	0.025	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Flour Essing et al., 1969
Rye, grain, R	<0.01	[ ]	19	P, 0.01	West Germany, [ ]	Crossman and Egels, 1975
Sage, R	0.18	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Sake, P	0.075		1	Sp., 0.05 ug	Shizuoka, Japan, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Salmon, boiled, C	0.01		1	AAS, 0.01	Tokyo, Japan, [ ]	Ikebe et al., 1977a
Salmon, pink, boiled, C	0.01	0.01	2	AAS, 0.01	Tokyo, Japan, [ ]	Ikebe et al., 1977a
Salt, R	0.023	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
Sardine, C	0.18	0.10-0.30	10	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	0.112		1	Sp., 0.05 ug	Norway, [ ]	Schroeder and Balassa, 1961
Sardine, R	0.01	0.01-0.04	12	AAS, 0.01	Chiba and Wakayama, Japan, [ ]	Ikebe et al., 1977b
Sardine (SARDINA PILCHARDUS), R	0.1	0.09-0.11	6	AAS, [ ]	Northern Adriatic Sea, 1972-1973	Gilmartin and Revelante, 1975
Sauces, five types, R	<0.01	0.01-0.02	6	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Sausage, R	0.107	0.005-0.910	26	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Scallop, R	249.0 (dry basis)	210-299 (dry basis)	6	ES, 20	Tasman Bay, New Zealand, [ ]	Brooks and Rumsby, 1965
Seabream, red (Tai), R	0.01	0.01-0.02	7	AAS, 0.01	Nagasaki, Japan, [ ]	Ikebe et al., 1977b
Seafood, [ ]	<0.1-3.0	[ ]	[ ]	AAS, [ ]	Australia, [ ]	Miller et al., 1976
Shallot, R	0.01	0.01-0.02	5	AAS, 0.01	Hiroshima, Japan, [ ]	Tanaka et al., 1977

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Shellfish, R	0.091	0.0025-0.430	21	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Shrimp (CRANGON VULGARIS), whole, R	3.50	[ ]	4	AAS, [ ]	U.K., NE Coast, 1972-1973	No known contamination sources Wright, 1976
Shrimp, Asian (unknown species), O	0.046	0.018-0.078	12	AAS, [ ]	India, Thailand, Phillipines, [ ]	Samples were commercially peeled and deveined tails. Zook et al., 1976
Shrimp, Mexican, unknown species, O	0.040	0.000-0.097	10	AAS, [ ]	Gulf of California, [ ]	Sample partly packer's product Zook et al., 1976
Skipjack, O	0.11	0.10-0.11	3	AAS, 0.01	Ehime and Hyogo, Japan, [ ]	Dried strips Ikebe et al., 1977a
Skipjack, seasoned, C	0.05		1	AAS, 0.01	Tokyo, Japan, [ ]	Ikebe et al., 1977a
Smelt, sweet, R	<0.01	0.01	5	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
Snapper, R	0.016 geo. mean	0.012-0.019	70	AAS, [ ]	New Zealand coastal waters, 1973	Edible muscle analyzed. (Authors' upper range limit corrected from 0.19). Brooks and Rumsey, 1974
Soda, beer, wine, R	0.0006 ug/ml	0.0002-0.0060 ug/ml	16	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Soft drink, C	<0.003	0.002-0.006	5	AAS, 0.002	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Soft drink, R	<0.003	0.002-0.005	9	AAS, 0.002	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS, REFERENCES
Sole, fillets, R	0.06		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Sorrel, R	0.015	[ ]	[ ]		Hokuriku, Japan, [ ]	Yamagata and Shigematsu, 1970
Soy sauce (Koikuchi shoyu), R	0.02	0.02-0.02	3	AAS, 0.01	Osaka, Kagawa, and Chiba, Japan, [ ]	Ikebe et al., 1977a
Soy sauce (Tamari shoyu), R	0.01	0.01-0.03	3	AAS, 0.01	Aichi, Osaka, and Tokushima, Japan, [ ]	Ikebe et al., 1977a
Soy sauce (Usukuchi shoyu), R	0.02	0.01-0.04	2	AAS, 0.01	Chiba and Hyogo, Japan, [ ]	Ikebe et al., 1977a
Soybean, O	0.14	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Flour Guthrie, 1975
	0.10	0.06-0.13	3	AAS, 0.01	Nagano, Japan, [ ]	Curd, congealed Ikebe et al., 1977a
	0.05	0.02-0.09	3	AAS, 0.01	Nagano, Osaka and Kyoto, Japan, [ ]	Paste (Shiro-miso) Ikebe et al., 1977a
	0.03	0.02-0.03	3	AAS, 0.01	Aichi, Nigata, and Tokyo, Japan, [ ]	Paste (Aka-miso) Ikebe et al., 1977a
	0.02	0.02-0.02	3	AAS, 0.01	Osaka and Hyogo, Japan, [ ]	Curd Ikebe et al., 1977a
Soybean, F	0.09	0.04-0.12	3	AAS, 0.01	Osaka and Hokkaido, Japan, [ ]	Tanaka et al., 1977
Soybean (Kuromame), R	0.17	0.05-0.48	5	AAS, 0.01	Osaka and Hokkaido, Japan, [ ]	Tanaka et al., 1977
Spices, R	0.0007	0.0002-0.0016	3	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Spinach, C	0.09	0.003-0.19	7	AAS, 0.003	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Spinach, C	0.08	0.03-0.18	7	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
Spinach, F	0.08	0.04-0.13	4	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Spinach, R	0.11	0.03-0.31	4	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
	0.095	[ ]	[ ]		Kanto, Japan, [ ]	Yamagata and Shigematsu, 1970
	0.064		1	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
	0.059 geo. mean	0.055-0.063	2	AAS, 0.002	Dortmund, West Germany, 1973-1974	Authors' mean corrected from 0.039. Pfeilsticker and Markard, 1975
	0.045	0.019-0.070	8	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Spirits, R	0.004	0.003-0.005	4	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
	<0.02	0.01-0.02	10	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Squid, R	0.22	0.01-0.63	24	AAS, 0.01	East China Sea, [ ]	Ikebe et al., 1977b
Squid (NOTODARIUS GOULDI), F	<0.05	[ ]	2	AAS, 0.05	Tasmanian waters, 1972-1973	Eustace, 1974

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Strawberry, R	0.034 geo. mean	0.033-0.034	2	AAS, 0.002	Dortmund, West Germany, 1973-1974	Pfeilsticker and Markard, 1975
	0.03	0.02-0.07	5	AAS, 0.01	Nara and Tokushima, Japan, [ ]	Tanaka et al., 1977
	0.006	0.0002-0.029	13	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Sugar, O	0.05	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Refined Guthrie, 1975
	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Brown Guthrie, 1975
	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Demerara Guthrie, 1975
	<0.01	0.01	6	AAS, 0.01	Osaka, Tokyo, and Hyogo, Japan, [ ]	Coarse, crystal Ikebe et al., 1977a
	<0.01	0.01	6	AAS, 0.01	Osaka, Japan, [ ]	Candy Ikebe et al., 1977a
	<0.01	0.01	6	AAS, 0.01	Hyogo, Tokyo, and Mie, Japan, [ ]	Cube Ikebe et al., 1977a
	<0.01	0.01	6	AAS, 0.01	Tokyo, Osaka, and Kanazawa, Japan, [ ]	Granulated Ikebe et al., 1977a
	<0.01	0.01	5	AAS, 0.01	Tokyo, Osaka, Kanagawa, and Hyogo, Japan, [ ]	Superior white Ikebe et al., 1977a
Sugar, P	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
	0.005	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.0016		1	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Sugar, black, R	<0.01	0.01	5	AAS, 0.01	Osaka and Tokyo, Japan, [ ]	Ikebe et al., 1977a
Sugar, six types, R	<0.02	0.01-0.03	6	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Sweets and chocolates, various, P	<0.02	0.01-0.07	11	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Taro, young, R	0.13	0.04-0.30	5	AAS, 0.01	Osaka and Tokushima, Japan, [ ]	Tanaka et al., 1977
Tea, O	0.07	0.02-0.14	5	AAS, 0.01	Osaka and Hyogo, Japan, [ ]	Dried Ikebe et al., 1977a
	0.011	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Ready to use Essing et al., 1969
Tea, black, O	0.01	0.01-0.04	5	AAS, 0.01	Hyogo and Tokyo, Japan, [ ]	Dried Ikebe et al., 1977a
Tea, coarse, green, R	0.005		1	Sp., 0.05 ug	Japan, [ ]	Schroeder and Balassa, 1961
Tea, fine, green, R	0.002		1	Sp., 0.05 ug	Japan, [ ]	Schroeder and Balassa, 1961
Tea, green, dry, R	0.036 (dry basis)	0.013-0.098 (dry basis)	139	AAS, [ ]	Japan, 1974	Tsushida and Takeo, 1977
Tea, nine brands, R	0.03	0.01-0.06	9	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Tea, refined, green, R	0.001		1	Sp., 0.05 ug	Japan, [ ]	Schroeder and Balassa, 1961

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS, REFERENCES
Thyme, P	0.27	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Tomato, C	0.01	0.01	4	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
	<0.01	[ ]	4	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
Tomato, O	0.03		1	AAS, 0.01	Aichi, Japan, [ ]	Puree. Tanaka et al., 1977
	0.0037	0.0004-0.0068	32	P, 0.25 ng Cd/ml	West Germany, 1974	Dried tomato soup. Data are for reconstituted product. Collet, 1976
Tomato, R	0.03	0.02-0.04	3	AAS, 0.01	Japan, [ ]	Tanaka et al., 1977
	0.03	[ ]	12	AAS, [ ]	Jena, GDR, [ ]	Anke et al., 1976
	0.02	0.01-0.08	10	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	0.02	0.01-0.09	10	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1973
	0.02	0.01-0.09	10	AAS, 0.01	U.K., [ ]	Thomas et al., 1973
	0.015	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Essing et al., 1969
	0.013	<0.036	11	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
	0.010	0.0002-0.030	26	AAS, 0.0002	Sweden, [ ]	[illegible] et al., 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Tomato, Blenheim, R	0.01		1	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Tomato, sauce, C	0.044	0.010-0.080	8	Sp., 0.25 ug	Rumania, [ ]	Rautu and Sporn, 1970
Trout, brown, fillets (SALMO TRUTTA), R	<0.05		1	AAS, 0.05	Tasmanian waters, 1972-1973	Eustace, 1974
Tuna, R	<0.01	0.01-0.03	7	AAS, 0.01	Japan, [ ]	Ikebe et al., 1977b
Tuna, yellowfin (THUNNUS ALBACORES), C	0.047	0.000-0.139	10	AAS, [ ]	Pacific, Costa Rica, 1971	Zook et al., 1976
Turkey, liver, R	0.261	0.013-0.405	7	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Turnip, R	0.03	0.01-0.08	5	AAS, 0.01	Tokushima and Hyogo, Japan, [ ]	Tanaka et al., 1977
Turnip, leaves, R	0.19	[ ]	12	AAS, [ ]	Jena, GDR, [ ]	Anke et al., 1976
Turnip, swede, yellow, R	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Turnip, white, R	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Veal, R	0.057	[ ]	[ ]	AAS, [ ]	West Germany, [ ]	Prepared for cooking Essing et al., 1969
Veal, kidney, R	0.04		1	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Veal, liver, R	0.055	0.028-0.076	4	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Veal, topside, R	0.02	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975
Vegetables, O	0.0060	0.0002-0.0375	27	AAS, 0.0002	Alsace, France, [ ]	Fresh and preserved Laugel et al., 1976

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Vegetables, R	0.019	0.005-0.079	12	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Vegetables, green, O	<0.01	0.01-0.03	41	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Vegetables, green, mixed types, R	0.013	0.0002-0.070	160	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Vegetables, mixed, C	0.007	0.003-0.038	34	P, 0.25 ng Cd/ml	West Germany, 1974	Collet, 1975
Vegetables, mixed, F	0.04	0.01-0.13	27	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
Vegetables, root, O	<0.02	0.01-0.07	41	AAS, 0.01	U.K., 1971-1972	Prepared for cooking Ministry of Agriculture, Fisheries and Food, 1973
Vegetables, root, mixed, R	0.05	[ ]	2	AAS, 0.01	U.K., 1972	Grown 8 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.038	0.003-0.111	75	AAS, 0.0002	Sweden, [ ]	Fuchs et al., 1976
Vinegar, R	0.0007	0.0004-0.0011	5	AAS, 0.0002	Alsace, France, [ ]	Laugel et al., 1976
Vinegar, fruits, R	<0.01	0.01	3	AAS, 0.01	Osaka and Saitama, Japan, [ ]	Ikebe et al., 1977a
Vinegar, rice, R	<0.01	0.01	3	AAS, 0.01	Oita, Aichi, and Osaka, Japan, [ ]	Ikebe et al., 1977a
Walnut, R	0.03	[ ]	2	AAS, [ ]	New Zealand, 1971-1973	Guthrie, 1975

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Watercress, R	0.02	0.01-0.03	4	AAS, 0.01	U.K., 1971-1972	Ministry of Agriculture, Fisheries and Food, 1973
	0.02	0.01-0.04	6	AAS, 0.01	U.K., 1971-1972	Thomas et al., 1972
Whale meat, R	<0.01	0.01	3	AAS, 0.01	Japan, []	Ikebe et al., 1977b
Wheat, O	0.34	[]	2	AAS, []	New Zealand, 1971-1973	Germ Guthrie, 1975
	0.160		1	Sp., 0.05 ug	Okayama, Japan, []	Flour Schroeder and Balassa, 1961
	0.12	[]	2	AAS, []	New Zealand, 1971-1973	Bran Guthrie, 1975
	0.06	[]	4	AAS, []	New Zealand, 1971-1973	Wholemeal (100% extraction) Guthrie, 1975
	0.06	[]	2	AAS, []	New Zealand, 1971-1973	Kibbled product Guthrie, 1975
	0.05	[]	2	AAS, []	New Zealand, 1971-1973	Flour, patent white, 78% extraction Guthrie, 1975
	0.047	[]	[]	AAS, []	West Germany, []	Flour Essing et al., 1969
Wheat, R	0.04	0.02-0.06	3	AAS, 0.01	Japan, []	Tanaka et al., 1977
	0.01-0.04	[]	[]	AAS, []	Australia, []	Miller et al., 1976
Wheat, Fall, R	0.029	[]	2	AAS, 0.010	Uppsala, Sweden, 1977	Kjellstrom et al., 1974

(NEXT PAGE)

TABLE A.5. CADMIUM IN FOREIGN FOODS FROM UNCONTAMINATED AREAS, AGRICULTURAL ORIGIN
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENT, REFERENCE
Wheat, Fall, grain, R	0.035*	0.005-0.077	[illegible]	AAS, <0.01	Sweden, 1916-1972	Increasing Cd content with time attributed to contamination from air and fertilizers. 200 to 400 kg/ha superphosphate and 50-400 kg/ha calcium nitrate added yearly. Superphosphate cont'd about 25 ug Cd/g, wet wt. Kjellstrom et al., 1975
Wheat, grain, R	0.08 (dry basis)	0.01-0.23 (dry basis)	43	P, 0.01	West Germany, []	Mean recalculated to include all samples. Grossman and Fiala, 1975
Wheat, hard, O	<0.01	0.01	3	AAS, 0.01	Aichi and Tokyo, Japan, []	Flour Tanaka et al., 1977
Wheat, medium, O	<0.01	0.01	2	AAS, 0.01	Tokyo, Japan, []	Flour Tanaka et al., 1977
Wheat, soft, O	<0.01	0.01	3	AAS, 0.01	Tokyo, Japan, []	Flour Tanaka et al., 1977
Wheat, Spring, R	0.053	[]	2	AAS, 0.010	Uppsala, Sweden, 1971	Kjellstrom et al., 1974
	0.052	0.050-0.053	2	AAS, 0.010	Malar Valley, Sweden, 1971	Kjellstrom et al., 1974

(NEXT PAGE)

TABLE A.[illegible]. CADMIUM IN FOREIGN FOODS FROM [illegible] AREAS, [illegible]
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Wheat, Spring, grain, P	0.068*	0.018-0.136	35	AAS, [illegible]	Sweden, 1916-1972	No significant concentration trend with time. [illegible] kg/ha superphosphate and [illegible] kg/ha calcium nitrate added annually. Phosphate fertilizer cont'd about [illegible], wet wt. Kjellstrom et al., 1975
Wheat, whole, R	0.072		1	Sp., 0.05 ug	[illegible], Japan, []	Schroeder and Balassa, 1961
	0.054		1	Sp., 0.05 ug	[illegible], Japan, []	Schroeder and Balassa, 1961
Wheat, Winter, P	0.087*	[]	[]	AAS, []	Sweden, 1974	Soil cont'd [illegible] ppm Cd. Fertilizer cont'd [illegible] ppm Cd. [illegible] kg N/ha + [illegible] kg P added per year. Andersson, [illegible]
	0.076*	[]	[]	AAS, []	Sweden, 1974	Soil cont'd [illegible] ppm Cd. [illegible] kg N/ha added as NPK [illegible]. Fertilizer cont'd [illegible] ppm Cd. Ibid.
	0.071*	[]	[]	AAS, []	Sweden, 1974	Soil cont'd [illegible] ppm Cd; fertilizer contained [illegible] ppm Cd. [illegible] kg N/ha added per yr as [illegible]. Soil pH [illegible]. Andersson, [illegible]

(NEXT PAGE)

TABLE A.6. CADMIUM IN FOREIGN FOODS FROM [illegible] AREAS, [illegible]
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	[illegible]
Wheat, Winter, R	0.060	[]	[]	AAS, []	[illegible], 1974	No phosphate fertilizer added, but soil contained [illegible] ppm Cd. Soil pH was [illegible]. [illegible], 197[illegible]
Wheatgerm, R	0.12	0.10-0.14	2	AAS, 0.01	U.K., 1971-1973	Ministry of Agriculture, Fisheries and Food, 1973
Whiting, R	0.014	0.002-0.030	[illegible]	AAS, []	[illegible], Norway, 1972-1973	Fish muscle analyzed. Havre et al., 1973
Whiting (MERLANGUS MERLANGUS), R	6.2 (dry basis)	[]	337		[illegible], U.K., 1971	Whole fish. [illegible] et al., 1974
Wine, R	0.027	0.003-0.330	9	P, 0.25 [illegible]	West Germany, 1972	[illegible], 1973
	<0.05	[]	57	AAS, 0.01	U.K., 1971-1973	Ministry of Agriculture, Fisheries and Food, 1973
	<0.010	[]	10	Sp., 0.25 [illegible]	Canada, []	[illegible], 197[illegible]
Wine, red, R	0.017	[]	[]	AAS, []	West Germany, []	[illegible] et al., 196[illegible]
Wine, white, R	0.009	[]	[]	AAS, []	West Germany, []	[illegible] et al., 196[illegible]
Worcestershire sauce, R	0.01	0.01-0.04	3	AAS, 0.01	Aichi, [illegible], and Tokyo, Japan, []	[illegible] et al., 197[illegible]
Yam, R	0.04	0.03-0.05	5	AAS, 0.01	Aichi and [illegible], Japan, []	[illegible] et al., 197[illegible]

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS, REFERENCES
FRUITS	Apple, R	0.11	[]	AAS, []	Freiburg, FRG, [] (12)	Near non-ferrous metal smelters. Acke et al., 1979
	Rhubarb, R	[]	0.02-0.19	AAS, 0.01 ug	Australia, [] (12)	Port Pirie lead-zinc smelter located 3 km N of sample site. Extractable Cd 0.23-14 ppm in surface soil. Tiller and de Vries, 1977
GARDEN FRUIT	Tomato, R	0.03	[]		Derbyshire, U.K., [] (1)	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	Tomato, R	[]	0.01-0.21	AAS, 0.01 ug	Australia, [] (44)	Port Pirie lead-zinc smelter located 3 km N of sample site. Extractable Cd 0.23-14 ppm in surface soil. Tiller and de Vries, 1977
	Capsicum, R	[]	0.02-0.12	AAS, 0.01 ug	Australia, [] (6)	Port Pirie lead-zinc smelter located 3 km N of sample site. Extractable Cd 0.23-14 ppm in surface soil. Tiller and de Vries, 1977
GARDEN FRUITS	Chilies, R	0.63 (dry basis)	[]	AAS, []	Wollongong, Australia, [] (2)	Copper smelter approximately 0.8 km from garden. Air dried soil contained 3.44 plus or minus 0.4 ppm extractable Cd. Beavington, 1975

(NEXT PAGE)

BLANK PAGE

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
GARDEN FRUITS	Cauliflower, head, R	0.52 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1972 (8-44)	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-4.34 ppm Cd. Hutchinson et al., 1974
	Tomato, R	0.18	[]	AAS, []	Freiburg, GDR, [] (12)	Near nonferrous metal smelters Anke et al., 1976
	Cucumber, R	0.04	[]	AAS, []	West Germany, 1972 ([ ])	Near cadmium-emitting factory Michels et al., 1974
	Tomato, R	0.02	[]	AAS, []	West Germany, 1972 ([ ])	Near cadmium-emitting factory Michels et al., 1974
GRAIN AND CEREAL	Rice, unpolished, R	2.50	0.72-4.17		Toyama, Japan, 1967 (6)	Area polluted with mine drainage; soil contained 4.2 ppm Cd. Yamagata and Shigematsu, 1970
	Oats, grain, R	1.21	[]	AAS, []	Freiburg, GDR, [] (12)	Site of nonferrous metal smelters Anke et al., 1976
	Wheat, grain, R	0.47	[]	AAS, []	Freiburg, GDR, [] (12)	Site of nonferrous metal smelters Anke et al., 1976
	Rice, Honen-wase, unpolished, R	0.35	[]	AAS, []	Ohno, Japan (Annaka), 1972 (18)	From contaminated area 15 km downstream from zinc mine. Soil pH, 4.7; soluble Cd in soil, 0.38 ppm. Takijima and Katsumi, 1973

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS, REFERENCE
GRAIN AND CEREAL	Rice, Honen-wase, unpolished, R	0.19	[ ]	AAS, [ ]	Ohno, Japan (Kuzuryu), 1970 (10)	From contaminated area 35 km downstream from zinc mine. Soil pH 4.9; soluble Cd in soil, 0.72 ppm. Takijima and Katsumi, 1973
	Wheat, R	0.108	[ ]	AAS, 0.010	Finspang, Sweden, 1970 (2)	4 km NW of cadmium-emitting copper alloy plant Kjellstrom et al., 1974
	Wheat, R	0.081	[ ]	AAS, 0.010	Finspang, Sweden, 1971 (2)	4 km NW of cadmium-emitting copper alloy plant Kjellstrom et al., 1974
	Wheat, grain, R	0.06	[ ]	AAS, [ ]	Freiburg, GDR, [ ] (12)	Site of nonferrous metal smelters Anke et al., 1976
	Barley, R	0.039	0.011-0.134	AAS, 0.010	Boton, Sweden, [ ] (9)	5 km N of cadmium-emitting smelter Kjellstrom et al., 1974
	Oats, R	0.030	[ ]	AAS, 0.010	Finspang, Sweden, 1971 (10)	Near cadmium-emitting factory Kjellstrom et al., 1974
	Barley, R	0.029	0.014-0.041	AAS, 0.010	Skelleftehamn, Sweden, [ ] (8)	2 km NW of cadmium-emitting smelter Kjellstrom et al., 1974
LEAFY VEGETABLES	Turnip, leaves, R	5.87	[ ]	AAS, [ ]	Freiburg, GDR, [ ] (12)	Near nonferrous smelters Anke et al., 1976

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCE
LEAFY VEGETABLES	Lettuce, R	4.5 (dry basis)	[]	AAS, []	Wollongong, Australia, [] (12)	Copper smelter approximately 0.5 km from garden. Air dried soil contained 1.96 plus or minus 0.3 ppm extractable Cd. Beavington, 1975
	Celery, root, R	4.30 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1972 (8 - 44)	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Lettuce, root, R	2.80* (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1972 (8 - 44)	Spring crop. Muck soil cont'd 1.5 to 4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Lettuce, R	2.4	[]	AAS, []	Trail, Canada, 1972 ([])	Near heavy metal smelter Somers, 1974
	Cabbage, leaf, R	2.30 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1972 (8-44)	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Cabbage (outer leaves), R	2.1 (dry basis)	1.1-3.6 (dry basis)	AAS, []	Derbyshire, U.K., [] (4)	Soil contained 12 to 41 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION, (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENT, REFERENCE
LEAFY VEGETABLES	Lettuce, leaf, R	2.05* (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1972 (8 - 44)	Spring crop. Muck soil cont'd [illegible] to 4.8 ppm Cd. Fertilizer cont'd 2.75-4.38 ppm Cd. Hutchinson et al., 1974
	Celery, leaf, R	2.02* (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1972 (8-44)	Spring crop. Muck soil cont'd [illegible]-4.8 ppm Cd. Fertilizer cont'd 2.75-4.38 ppm Cd. Hutchinson et al., 1974
	Cabbage (outer leaves), R	1.6 (dry basis)	1.1-1.8 (dry basis)	AAS, []	Derbyshire, U.K., [] (5)	Soil contained [illegible] to 38 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	Cabbage (outer leaves), R	1.6 (dry basis)	1.0-2.8 (dry basis)	AAS, []	Derbyshire, U.K., [] (4)	Soil contained [illegible] ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	Brussels sprout, R	1.5 (dry basis)	1.2-1.7 (dry basis)	AAS, []	Derbyshire, U.K., [] (2)	Soil contained [illegible] to 41 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	Leafy vegetables, R	1.16 (dry basis)	[]	AAS, []	Wollongong, Australia, [] (9)	Copper smelter; approximately [illegible] km from smelter. Air-dried soil contained [illegible] plus or minus [illegible] ppm extractable Cd. Beavington, 1975

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS, REFERENCES
LEAFY VEGETABLES	Celery, leaf, R	1.14* (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1973 (8-44)	Fall crop. Muck soil cont'd 3.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.34 ppm Cd. Hutchinson et al., 1974
	Cabbage (inner leaves), R	1.1 (dry basis)	0.7-1.4 (dry basis)	AAS, []	Derbyshire, U.K., [] (6)	Soil contained 3 to 7 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	Brussels sprout, R	1.1 (dry basis)	0.8-1.6 (dry basis)	AAS, []	Derbyshire, U.K., [] (4)	Soil contained 3 to 7 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	Cabbage (inner leaves), R	1.0 (dry basis)	0.8 - 1.2 (dry basis)	AAS, []	Derbyshire, U.K., [] (4)	Soil contained 22 to 41 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	Brussels sprout, R	0.9 (dry basis)	0.8-1.0 (dry basis)	AAS, []	Derbyshire, U.K., [] (3)	Soil contained 11 to 18 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	Cabbage (inner leaves), R	0.8 (dry basis)	0.6-1.0 (dry basis)	AAS, []	Derbyshire, U.K., [] (5)	Soil contained 11 to 18 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS (SOURCE)
LEAFY VEGETABLES	Leafy vegetables, mixed, R	0.76	0.11-3.7	AAS, 0.01	U.K., 1972 (17)	Grown 1 to 3 1/2 miles from metal refining plant. Ministry of Agriculture, Fisheries and Food, [illegible]
	Celery, root, R	0.73 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1976 (8-44)	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-4.38 ppm Cd. Hutchinson et al., 1976
	Lettuce, leaf, R	0.65* (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1976 (8 - 44)	Fall crop. Muck soil cont'd 1.5 to 4.8 ppm Cd. Fertilizer cont'd 0.75-4.38 ppm Cd. Hutchinson et al., 1976
	Cabbage, leaf, R	0.60 *(dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1976 (8-44)	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-4.38 ppm Cd. Hutchinson et al., 1976
	Lettuce, root, R	0.59* (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1976 (8 - 44)	Fall crop. Muck soil cont'd 1.5 to 4.8 ppm Cd. Fertilizer cont'd 0.75-4.38 ppm Cd. Hutchinson et al., 1976
	Leafy vegetables, mixed, R	0.45	0.01-2.5	AAS, 0.01	U.K., 1972 (36)	Grown within 1 mile of metal refining plant. Ministry of Agriculture, Fisheries and Food, [illegible]
	Kohlrabi, R	0.42	[]	AAS, []	Friedberg, [illegible] (12)	Near contaminating metal smelter. Kloke et al., [illegible]

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Leafy vegetables, mixed, R	0.40	0.01-2.7	AAS, 0.01	U.K., 1972 (17)	Grown 1 1/2 to 2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Leafy vegetables, mixed, R	0.33	0.04-1.3	AAS, 0.01	U.K., 1971-1972 (12)	Grown within 1 mile of metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Cabbage, white, R	0.27	[ ]	AAS, [ ]	West Germany, 1970 ([ ])	Near cadmium-emitting factory Michels et al., 1974
	Lettuce, R	0.20	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil cont'd 5.5 ppm available Cd. Pike et al., 1975
	Kale, green, R	0.17	[ ]	AAS, [ ]	West Germany, 1970 ([ ])	Near cadmium-emitting factory Michels et al., 1974
	Lettuce, R	0.15	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	Leafy vegetables, mixed, R	0.11	0.01-0.84	AAS, 0.01	U.K., 1972 (18)	Grown 8 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Leafy vegetables, mixed, R	0.11	0.05-0.4	AAS, 0.01	U.K., 1971-1972 (11)	Grown 1 1/2 to 2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEAFY VEGETABLES	Leafy vegetables, mixed, R	0.11	0.05-0.2	AAS, 0.01	U.K., 1971-1972 (7)	Grown 1 to 1 1/2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Lettuce, R	0.10	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975
	Leek, R	0.1	[ ]	AAS, [ ]	West Germany, 1970 ([ ])	Near cadmium-emitting factory Michels et al., 1974
	Cabbage, R	0.05	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil contained 5.5 ppm available Cd. Pike et al., 1975
	Cauliflower, R	0.04	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil cont'd 2.9 ppm available Cd. Pike et al., 1975
	Cabbage, R	0.04	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	Cauliflower, R	0.03	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975
	Cabbage, P	0.02	[ ]		Derbyshire, U.K., [ ] ([ ])	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975
	Lettuce, head, R	[ ]	0.03-0.3	AAS, [ ]	West Germany, 1970 ([ ])	Near cadmium-emitting factory Michels et al., 1974

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
LEGUME VEGETABLES	Bean, R	0.03	[]		Derbyshire, U.K., [] ([])	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
MEAT, FISH, POULTRY	Mutton, kidney, R	40.	[]	AAS, []	Freiberg, GDR, [] (35)	Site of nonferrous metal smelters Anke et al., 1976
	Oyster (OSTREIDAE ANGASI), R	35.5-174.3 (dry basis)	[]	AAS, []	Australia, Port Phillip Bay, 1975 ([])	Near pollution sources Talbot et al., 1976
	Oyster (CRASSOSTREA GIGAS), R	19.9	[]	AAS, []	Ralph's Bay, Tasmania, 1972 (120)	Downstream from industrial sources. All samples exceeded local food regulations. Thrower and Eustace, 1973
	Mutton, kidney, R	19.	[]	AAS, []	Ilsenburg, GDR, [] (35)	Site of nonferrous metal smelters Anke et al., 1976
	Mutton, kidney, R	12.	[]	AAS, []	Mansfeld, GDR, [] (35)	Site of nonferrous metal smelters Anke et al., 1976
	Oyster, mixed species, R	8.55	0.24-30.69	AAS, []	Tasmanian waters, [] (48)	Concentration related to contact with polluted waters. Ratkowsky et al., 1974
	Oyster (CRASSOSTREA GIGAS), R	6.37	[]	AAS, []	Tamar estuary, Tasmania, 1972 (50)	Downstream from industrial sources Thrower and Eustace, 1973
	Oyster (CRASSOSTREA GIGAS), R	5.91	4.0-8.0	AAS, []	Tamar River, Tasmania, 1973 (11)	>5 yrs old Ayling, 1974

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Oyster (CRASSOSTREA GIGAS), R	4.83	[ ]	AAS, [ ]	Tamar River, Tasmania, 1973 (2)	Ayling, 1974
	Mutton, liver, R	3.5	[ ]	AAS, [ ]	Freiberg, GDR, [ ] (35)	Site of nonferrous metal smelters Anke et al., 1976
	Mutton, liver, R	3.2	[ ]	AAS, [ ]	Mansfeld, GDR, [ ] (35)	Site of nonferrous metal smelters Anke et al., 1976
	Mussel (MYTILUS EDULIS), R	2.8-83 (dry basis)	[ ]	AAS, [ ]	Australia, Port Phillip Bay, 1975 ([ ])	Near pollution sources Talbot et al., 1976
	Mutton, liver, R	2.8	[ ]	AAS, [ ]	Ilsenburg, GDR, [ ] (35)	Site of nonferrous metal smelters Anke et al., 1976
	Oyster (CRASSOSTREA GIGAS), R	2.00	[ ]	AAS, [ ]	Tamar River, Tasmania, 1973 (2)	Ayling, 1974
	Beef, kidney, R	0.510	0.160-1.650	AAS, 0.005	Nordenham, West Germany, 1972 (9)	Near industrial region Kreuzer et al., 1975
	Beef, liver, P	0.124	0.008-0.230	AAS, 0.005	Nordenham, West Germany, 1972 (9)	Near industrial region Kreuzer et al., 1975
	Corbicula, R	[ ]	0.07-1.58		Lake Suwa, Japan, 1969 ([ ])	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970
	Snail, pond, P	[ ]	0.09-0.66		Lake Suwa, Japan, 1969 ([ ])	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
MEAT, FISH, POULTRY	Carp, crucian, R	[ ]	0.03-0.06		Lake Suwa, Japan, 1969 ([ ])	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970
	Carp, R	[ ]	0.01-0.02		Lake Suwa, Japan, 1969 ([ ])	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970
	Beef, flesh, R	<0.005	<0.005	AAS, 0.005	Nordenham, West Germany, 1972 (9)	Near industrial region Kreuzer et al., 1975
OTHER	Mint, R	1.2	[ ]	AAS, [ ]	Trail, Canada, 1970 ([ ])	Near heavy metal smelter Somers, 1971
ROOT VEGETABLES	Carrot, O	2.4	[ ]	AAS, [ ]	Trail, Canada, 1970 ([ ])	Cooked before analysis. Near smelter. Somers, 1971
	Parsnip, root, R	1.10 * (dry basis)	[ ]	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970 (8-44)	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Potato, tuber, R	1.05 * (dry basis)	[ ]	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970 (8-44)	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Carrot, root, R	0.98 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1970 (8-44)	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Vegetables, root, mixed, R	0.70	0.05-1.0	AAS, 0.01	U.K., 1972 (3)	Grown 1 to 1 1/2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Potato, tuber, R	0.45 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1970 (8-44)	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Carrot, root, R	0.43 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1970 (8-44)	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Onion, R	0.40	[]	AAS, []	Freiburg, GDR, [] (12)	Near nonferrous metal smelters Anke et al., 1976
	Potato, R	0.31	[]	AAS, []	Freiburg, GDR, [] (12)	Near nonferrous metal smelters Anke et al., 1976
	Vegetables, root, mixed, R	0.30	0.10-0.7	AAS, 0.01	U.K., 1972 (3)	Grown within 1 mile of metal refining plant Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION. (CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Onion, bulb, R	0.25 * (dry basis)	[]	AAS, []	Holland Marsh, Toronto, Canada, 1970 (8-44)	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	Radish, R	0.10	[]		Derbyshire, U.K., [] ([ ])	Former sewage farm. Soil cont'd 5.5 ppm available Cd. Pike et al., 1975
	Vegetables, root, mixed, R	0.07	0.05-0.1	AAS, 0.01	U.K., 1972 (4)	Grown 1 1/2 to 2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	Carrot, R	0.07	[]	AAS, []	West Germany, 1970 ([ ])	Near cadmium-emitting factory Michels et al., 1974
	Carrot, R	0.06	[]		Derbyshire, U.K., [] ([ ])	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	Radish, R	0.05	[]		Derbyshire, U.K., [] ([ ])	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	Carrot, R	0.05	[]		Derbyshire, U.K., [] ([ ])	Former sewage farm. Soil contained 5.5 ppm available Cd. Pike et al., 1975
	Carrot, R	0.01	[]		Derbyshire, U.K., [] ([ ])	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975

(NEXT PAGE)

TABLE A.7. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, BY CATEGORY AND DECREASING CONCENTRATION.
(CONTINUED)

CATEGORY	FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE, AND NUMBER OF SAMPLES	COMMENTS REFERENCES
ROOT VEGETABLES	Carrot, R	[ ]	0.02-2.6	AAS, 0.01 ug	Australia, [ ] (21)	Port Pirie lead-zinc smelter located 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977
	Beet, R	[ ]	0.03-0.35	AAS, 0.01 ug	Australia, [ ] (5)	Port Pirie lead-zinc smelter located 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977
	Beet, silver, R	[ ]	0.04-0.49	AAS, 0.01 ug	Australia, [ ] (26)	Port Pirie lead-zinc smelter located approximately 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Apple, F	0.11	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Near nonferrous metal smelters Anke et al., 1976
Barley, R	0.039	0.011-0.134	9	AAS, 0.010	Burea, Sweden, [ ]	5 km S of cadmium-emitting smelter Kjellstrom et al., 1974
	0.029	0.014-0.041	8	AAS, 0.010	Skelleftehamn, Sweden, [ ]	2 km NW of cadmium-emitting smelter Kjellstrom et al., 1974
Bean, R	0.03	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
Beef, flesh, F	<0.005	<0.005	9	AAS, 0.005	Nordenham, West Germany, 1972	Near industrial region Kreuzer et al., 1975
Beef, kidney, R	0.510	0.160-1.650	9	AAS, 0.005	Nordenham, West Germany, 1972	Near industrial region Kreuzer et al., 1975
Beef, liver, R	0.124	0.005-0.230	9	AAS, 0.005	Nordenham, West Germany, 1972	Near industrial region Kreuzer et al., 1975
Beet, R	[ ]	0.03-0.35	5	AAS, 0.01 ug	Australia, [ ]	Port Pirie lead-zinc smelter located 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977

(NEXT PAGE)

BLANK PAGE

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Beet, silver, F	[]	0.04-0.49	26	AAS, 0.01 ug	Australia, []	Port Pirie lead-zinc smelter located approximately 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977
Brussels sprout, F	1.5 (dry basis)	1.2-1.7 (dry basis)	2	AAS, []	Derbyshire, U.K., []	Soil contained 22 to 41 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	1.1 (dry basis)	0.8-1.6 (dry basis)	4	AAS, []	Derbyshire, U.K., []	Soil contained 3 to 7 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	0.9 (dry basis)	0.8-1.0 (dry basis)	3	AAS, []	Derbyshire, U.K., []	Soil contained 11 to 18 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
Cabbage, F	0.05	[]	[]		Derbyshire, U.K., []	Former sewage farm. Soil contained 5.5 ppm available Cd. Pike et al., 1975
	0.04	[]	[]		Derbyshire, U.K., []	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	0.02	[]	[]		Derbyshire, U.K., []	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING EFFECT	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cabbage (inner leaves), F	1.1 (dry basis)	0.7-1.6 (dry basis)	6	AAS, [ ]	Derbyshire, U.K., [ ]	Soil contained 3 to 7 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	1.0 (dry basis)	0.8 - 1.2 (dry basis)	4	AAS, [ ]	Derbyshire, U.K., [ ]	Soil contained 22 to 41 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	0.8 (dry basis)	0.6-1.0 (dry basis)	5	AAS, [ ]	Derbyshire, U.K., [ ]	Soil contained 11 to 18 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
Cabbage (outer leaves), F	2.1 (dry basis)	1.1-3.8 (dry basis)	4	AAS, [ ]	Derbyshire, U.K., [ ]	Soil contained 22 to 41 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	1.6 (dry basis)	1.1-1.8 (dry basis)	5	AAS, [ ]	Derbyshire, U.K., [ ]	Soil contained 11 to 18 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975
	1.6 (dry basis)	1.0-2.8 (dry basis)	6	AAS, [ ]	Derbyshire, U.K., [ ]	Soil contained 3 to 7 ppm Cd from early mining and smelting activities. Thornton and Webb, 1975

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cabbage, leaf, R	2.30 * (dry basis)	[]	8-44	AAS, []	Holland Marsh, Toronto, Canada, 1970	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	0.60 *(dry basis)	[]	8-44	AAS, []	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Cabbage, white, R	0.27	[]	[]	AAS, []	West Germany, 1970	Near cadmium-emitting factory Michels et al., 1974
Capsicum, R	[]	0.02-0.12	6	AAS, 0.01 ug	Australia, []	Port Pirie lead-zinc smelter located 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977
Carp, R	[]	0.01-0.02	[]		Lake Suwa, Japan, 1969	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970
Carp, crucian, R	[]	0.03-0.06	[]		Lake Suwa, Japan, 1969	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970
Carrot, O	2.4	[]	[]	AAS, []	Trail, Canada, 1970	Cooked before analysis. Near smelter. Somers, 1971

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Carrot, R	0.07	[ ]	[ ]	AAS, [ ]	West Germany, 1970	Near cadmium-emitting factory Michels et al., 1974
	0.06	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	0.05	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil contained 5.5 ppm available Cd. Pike et al., 1975
	0.01	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975
	[ ]	0.02-2.6	21	AAS, 0.01 ug	Australia, [ ]	Port Pirie lead-zinc smelter located 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977
Carrot, root, R	0.98 * (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	0.43 * (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Cauliflower, R	0.04	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	0.03	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975
Cauliflower, head, R	0.52 * (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd . Hutchinson et al., 1974
Celery, leaf, R	2.02* (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	1.14* (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Celery, root, R	4.30 * (dry basis)	[ ]	8 - 44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING EFFECT	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Celery, root, R	0.73 * (dry basis)	[]	8-44	AAS, []	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Chilies, F	0.63 (dry basis)	[]	2	AAS, []	Wollongong, Australia, []	Copper smelter approximately 0.5 km from garden. Air dried soil contained 1.99 plus or minus 0.3 ppm extractable Cd. Beavington, 1975
Corticula, R	[]	0.07-1.59	[]		Lake Suwa, Japan, 1969	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970
Cucumber, R	0.04	[]	[]	AAS, []	West Germany, 1970	Near cadmium-emitting factory Michels et al., 1974
Kale, green, R	0.17	[]	[]	AAS, []	West Germany, 1970	Near cadmium-emitting factory Michels et al., 1974
Kohlrabi, R	0.42	[]	12	AAS, []	Freiburg, GDR, []	Near nonferrous metal smelters Anke et al., 1976
Leafy vegetables, R	1.16 (dry basis)	[]	9	AAS, []	Wollongong, Australia, []	Copper smelter approximately 0.5 km from garden. Air-dried soil contained 1.99 plus or minus 0.3 ppm extractable Cd. Beavington, 1975

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Leafy vegetables, mixed, R	0.76	0.10-5.7	17	AAS, 0.01	U.K., 1972	Grown 1 to 1 1/2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.45	0.01-2.5	18	AAS, 0.01	U.K., 1972	Grown within 1 mile of metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.40	0.01-2.7	17	AAS, 0.01	U.K., 1972	Grown 1 1/2 to 2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.33	0.04-1.3	12	AAS, 0.01	U.K., 1971-1972	Grown within 1 mile of metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.11	0.01-0.84	18	AAS, 0.01	U.K., 1972	Grown 8 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.11	0.05-0.4	11	AAS, 0.01	U.K., 1971-1972	Grown 1 1/2 to 2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.11	0.05-0.2	7	AAS, 0.01	U.K., 1971-1972	Grown 1 to 1 1/2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE 4.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Leek, R	0.1	[]	[]	AAS, []	West Germany, 1970	Near cadmium-emitting factory Michels et al., 1974
Lettuce, R	4.5 (dry basis)	[]	12	AAS, []	Wollongong, Australia, []	Copper smelter approximately 0.5 km from garden. Air dried soil contained 1.99 plus or minus 0.3 ppm extractable Cd. Beavington, 1975
	2.4	[]	[]	AAS, []	Trail, Canada, 1970	Near heavy metal smelter Somers, 1971
	0.20	[]	[]		Derbyshire, U.K., []	Former sewage farm. Soil cont'd 5.5 ppm available Cd. Pike et al., 1975
	0.15	[]	[]		Derbyshire, U.K., []	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	0.10	[]	[]		Derbyshire, U.K., []	Former sewage farm. Soil contained 1.6 ppm available Cd. Pike et al., 1975
Lettuce, head, R	[]	0.03-0.3	[]	AAS, []	West Germany, 1970	Near cadmium-emitting factory Michels et al., 1974
Lettuce, leaf, R	2.05* (dry basis)	[]	8 - 44	AAS, []	Holland Marsh, Toronto, Canada, 1972	Spring crop. Muck soil cont'd 1.5 to 4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING. (CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Lettuce, leaf, R	0.65* (dry basis)	[]	8 - 44	AAS, []	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5 to 4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Lettuce, root, R	2.80* (dry basis)	[]	8 - 44	AAS, []	Holland Marsh, Toronto, Canada, 1970	Spring crop. Muck soil cont'd 1.5 to 4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	0.59* (dry basis)	[]	8 - 44	AAS, []	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5 to 4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Mint, R	1.2	[]	[]	AAS, []	Trail, Canada, 1970	Near heavy metal smelter Somers, 1971
Mussel (MYTILUS EDULIS), R	2.8-83 (dry basis)	[]	[]	AAS, []	Australia, Port Phillip Bay, 1975	Near pollution sources Talbot et al., 1976
Mutton, kidney, R	40.	[]	35	AAS, []	Freiberg, GDR, []	Site of nonferrous metal smelters Anke et al., 1976
	19.	[]	35	AAS, []	Ilsenburg, GDR, []	Site of nonferrous metal smelters Anke et al., 1976
	12.	[]	35	AAS, []	Mansfeld, GDR, []	Site of nonferrous metal smelters Anke et al., 1976
Mutton, liver, R	3.5	[]	35	AAS, []	Freiberg, GDR, []	Site of nonferrous metal smelters Anke et al., 1976

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Mutton, liver, R	3.2	[ ]	35	AAS, [ ]	Mansfeld, GDR, [ ]	Site of nonferrous metal smelters Anke et al., 1976
	2.8	[ ]	35	AAS, [ ]	Ilsenburg, GDR, [ ]	Site of nonferrous metal smelters Anke et al., 1976
Oats, R	0.030	[ ]	10	AAS, 0.010	Finspang, Sweden, 1971	Near cadmium-emitting factory Kjellstrom et al., 1974
Oats, grain, R	1.21	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Site of nonferrous metal smelters Anke et al., 1976
Onion, R	0.40	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Near nonferrous metal smelters Anke et al., 1976
Onion, bulb, R	0.25 * (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Oyster (CRASSOSTREA GIGAS), R	19.9	[ ]	120	AAS, [ ]	Ralph's Bay, Tasmania, 1972	Downstream from industrial sources. All samples exceeded local food regulations. Thrower and Eustace, 1973
	6.37	[ ]	50	AAS, [ ]	Tamar estuary, Tasmania, 1972	Downstream from industrial sources Thrower and Eustace, 1973
	5.91	4.0-8.0	11	AAS, [ ]	Tamar River, Tasmania, 1973	>5 yrs old Ayling, 1974

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Oyster (CRASSOSTREA GIGAS), R	4.83	[ ]	2	AAS, [ ]	Tamar River, Tasmania, 1973	Ayling, 1974
	2.00	[ ]	2	AAS, [ ]	Tamar River, Tasmania, 1973	Ayling, 1974
Oyster (OSTREIDAE ANGASI), R	35.5-174.3 (dry basis)	[ ]	[ ]	AAS, [ ]	Australia, Port Phillip Bay, 1975	Near pollution sources Talbot et al., 1976
Oyster, mixed species, R	8.55	0.24-30.69	48	AAS, [ ]	Tasmanian waters, [ ]	Concentration related to contact with polluted waters. Ratkowsky et al., 1974
Parsnip, root, R	1.10 * (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Potato, R	0.31	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Near nonferrous metal smelters Anke et al., 1976
Potato, tuber, R	1.05 * (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Spring crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
	0.45 * (dry basis)	[ ]	8-44	AAS, [ ]	Holland Marsh, Toronto, Canada, 1970	Fall crop. Muck soil cont'd 1.5-4.8 ppm Cd. Fertilizer cont'd 0.75-6.38 ppm Cd. Hutchinson et al., 1974
Radish, R	0.10	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil cont'd 5.5 ppm available Cd. Pike et al., 1975

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Radish, R	0.05	[]	[]		Derbyshire, U.K., []	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
Rhubarb, R	[]	0.02-0.19	12	AAS, 0.01 ug	Australia, []	Port Pirie lead-zinc smelter located 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977
Rice, Honen-wase, unpolished, R	0.35	[]	18	AAS, []	Ohno, Japan (Mana), 1970	From contaminated area 15 km downstream from zinc mine. Soil pH, 4.7; soluble Cd in soil, 0.38 ppm. Takijima and Katsumi, 1973
	0.19	[]	18	AAS, []	Ohno, Japan (Kuzuryu), 1970	From contaminated area 15 km downstream from zinc mine. Soil pH 4.9; soluble Cd in soil, 0.72 ppm. Takijima and Katsumi, 1973
Rice, unpolished, R	2.50	0.72-4.17	6		Toyama, Japan, 1967	Area polluted with mine drainage; soil contained 4.2 ppm Cd. Yamagata and Shigematsu, 1970
Snail, pond, R	[]	0.09-0.66	[]		Lake Suwa, Japan, 1969	Contaminated by effluents from electroplating factories. Yamagata and Shigematsu, 1970

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Tomato, R	0.03	[ ]	[ ]		Derbyshire, U.K., [ ]	Former sewage farm. Soil cont'd 2.8 ppm available Cd. Pike et al., 1975
	[ ]	0.01-0.21	44	AAS, 0.01 ug	Australia, [ ]	Port Pirie lead-zinc smelter located 1 km N of sample site. Extractable Cd 0.03-14 ppm in surface soil. Tiller and de Vries, 1977
	0.18	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Near nonferrous metal smelters Anke et al., 1976
	0.02	[ ]	[ ]	AAS, [ ]	West Germany, 1970	Near cadmium-emitting factory Michels et al., 1974
Turnip, leaves, R	5.87	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Near nonferrous smelters Anke et al., 1976
Vegetables, root, mixed, R	0.70	0.05-1.0	3	AAS, 0.01	U.K., 1972	Grown 1 to 1 1/2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.30	0.10-0.7	3	AAS, 0.01	U.K., 1972	Grown within 1 mile of metal refining plant Ministry of Agriculture, Fisheries and Food, 1973
	0.07	0.05-0.1	4	AAS, 0.01	U.K., 1972	Grown 1 1/2 to 2 miles from metal refining plant Ministry of Agriculture, Fisheries and Food, 1973

(NEXT PAGE)

TABLE A.8. CADMIUM IN FOREIGN FOODS FROM CONTAMINATED AREAS, ALPHABETICAL LISTING.
(CONTINUED)

FOOD, PROCESSING METHOD	MEAN (MG/KG, WET WT.)	RANGE (MG/KG, WET WT.)	NUMBER OF SAMPLES	ANAL. METHOD, DETECTION LIMIT (PPM)	LOCATION, DATE OF SAMPLING	COMMENTS REFERENCES
Wheat, R	0.108	[ ]	2	AAS, 0.010	Finspang, Sweden, 1970	4 km NW of cadmium-emitting copper alloy plant Kjellstrom et al., 1974
	0.081	[ ]	2	AAS, 0.010	Finspang, Sweden, 1971	4 km NW of cadmium-emitting copper alloy plant Kjellstrom et al., 1974
Wheat, grain, R	0.47	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Site of nonferrous metal smelters Anke et al., 1975
	0.06	[ ]	12	AAS, [ ]	Freiburg, GDR, [ ]	Site of nonferrous metal smelters Anke et al., 1976

TECHNICAL REPORT DATA

(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA-560/2-78-007	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE Cadmium in Foods: A Review of the World's Literature		5. REPORT DATE
		6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) John S. Drury and Anna S. Hammons		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Information Center Complex, Information Division Oak Ridge National Laboratory Oak Ridge, Tennessee 37830		10. PROGRAM ELEMENT NO.
		11. CONTRACT/GRANT NO. IAG-D7-0151
12. SPONSORING AGENCY NAME AND ADDRESS Office of Toxic Substances U.S. Environmental Protection Agency Washington, D.C. 20460		13. TYPE OF REPORT AND PERIOD COVERED Final
		14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES

16. ABSTRACT

This study tabulated detailed information for most of the original measurements of cadmium in foods published since 1940 and summarizes estimates of dietary intake of cadmium in the United States and foreign countries. Cadmium concentrations are indicated for about 1500 individual foods listed alphabetically and by decreasing concentration within typical food categories. Separate compilations are provided for foods originating in contaminated and uncontaminated areas and for domestic and foreign products. Most foods contained low concentrations of cadmium, generally less than 0.050 mg/kg, wet weight. Concentrations of cadmium were greatest in shellfish, leafy vegetables, potatoes, grain and cereal products, and selected animal organs, particularly kidneys and liver. Based on the tabulated data, the average daily U.S. dietary intake appears to lie within the range 30 to 50 μg. This estimate is 42% to 88% of the total tolerable limit of 400 to 500 μg per week recommended by the World Health Organization, and leaves little room for intake from other environmental or occupational sources.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
*Cadmium Food Contaminant	Health Effects Food Impurity	

18. DISTRIBUTION STATEMENT Release to Public	19. SECURITY CLASS (This Report) Unclassified	21. NO. OF PAGES
	20. SECURITY CLASS (This page) Unclassifed	22. PRICE

EPA Form 2220-1 (Rev. 4-77) PREVIOUS EDITION IS OBSOLETE